Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Vol. IX. CHICAGO, ILL., AUGUST 22, 1909. No. 2.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributers of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

DEXTER Portland Cement THE NEW STANDARD

Sole Agents SAMUEL H. FRENCH & CO. Philadelphia

SPECIAL FEATURES IN THIS NUMBER

The Devolpment and Uses of Water Resources.

Campaigning of the Concrete Silo by Building Material Men.

Annual Outing of the Ohio Builders' Supply Association.

New Lime Plant of the Riverside Lime and Stone Company, near Chicago.

Remarkable Improvement in the Activity of Building Material Market.

UNION MINING COMPANY

Manufacturers of the Celebrated

MOUNT SAVAGE FIRE BRICK

GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.,
Mount Savage, Md.

CAPACITY, 60,000 PER DAY. ESTABLISHED 1841.

Phoenix Portland Cement UNEXCELLED FOR ALL USES.

Manufactured by

PHOENIX CEMENT CO.

NAZARETH, PA.

Sole Selling Agent WM. G. HARTRANFT CEMENT CO., Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO., . . Ottawa, Ill.

RELIANCE Oak-Tanned

BEST BELT FOR GRIFFIN, TUBE AND BALL MILLS

Chicago Belting Co.

CHICAGO, PHILADELPHIA, PORTLAND, ORE., NEW ORLEANS.

MAKERS OF **Leather Belting**

BEST BELT FOR DAMP PLACES

SEA LION WATERPROOF LEATHER BELTING

ALMA Portland Cement

STANDARD BRAND OF MIDDLE WEST.

Specially adapted to all Reinforced Concrete and High-Class Work.

ALMA CEMENT CO.
WELLSTON, OHIO.

How do you figure your Lime Kiln, Rotary Cement Kiln and other furnace expenses and charges for Refractories?

By the cost of the BRICK, or by the length of the service they will give?

Harbison-Walker Refractories Co. { FIRE CLAY, SILICA, MAGNESIA, CHROME } **Brick**

Are made of the highest grade raw materials under expert supervision, in modern up-to-date works, and are worth more because better than others. They last longer and are more economical. You can prove this statement in your own works by sending us a trial order. Information, records and prices on request.

Harbison-Walker Refractories Co.

LARGEST CAPACITY PITTSBURG, PA. PROMPT SHIPMENTS

THIS SPACE FOR SALE

GOING!

GOING!

MARQUETTE CEMENT MANUFACTURING CO. PORTLAND CEMENT MILLS LA SALLE ILL. CHICAGO

A PERFECT RECORD FOR TEN YEARS

IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

MARQUETTE CEMENT MANUFACTURING CO.

Marquette Building, Chicago

Peninsular Portland Cement

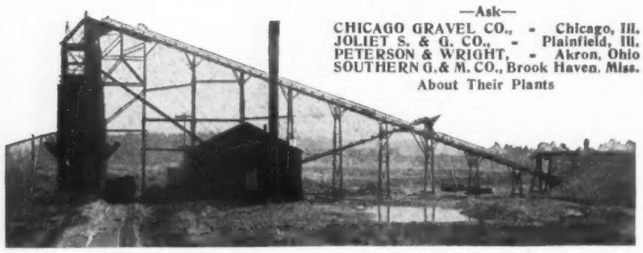
Acknowledged by competent Architects and Engineers to be unequaled for fineness, wonderful development of strength and sand carrying capacity.

"THE BEST IS THE CHEAPEST"

Address
Peninsular Portland Cement Co.
Jackson, Michigan

GRAVEL WASHING PLANTS

—Ask—
CHICAGO GRAVEL CO., - Chicago, Ill.
JOLIET S. & G. CO., - Plainfield, Ill.
PETERSON & WRIGHT, - Akron, Ohio
SOUTHERN G. & M. CO., Brook Haven, Miss.
About Their Plants



Stone Crushing, Cement and Power Plants

J. C. Buckbee Company, Engineers, CHICAGO

"LEHIGH" PORTLAND CEMENT

High Tensile Strength, Finely Ground, Light and Uniform in Color.
MANUFACTURED BY THE

Lehigh Portland Cement Co.
ALLENTOWN, PA

Western Office:
725 Rockefeller Bldg.,
CLEVELAND, OHIO

Write for Catalogue

Capacity, 8,000,000 Yearly.

Red Ring Portland Cement

Manufacturers: Sales Office Liggett Bldg. St. Louis

Strength Uniformity Satisfaction

A Dependable Portland Cement

An Unblemished Record for six years speaks for itself

Wolverine Portland Cement Company
Coldwater, Michigan
W. E. COBEAN, Agent, Chamber of Commerce Building, Chicago

ONE GRADE—ONE BRAND

Alpha Portland Cement

The Recognized Standard American Brand.

General Offices: EASTON, PA.

—SALES OFFICES:—

German National Bk. Bldg., PITTSBURGH.
Builders Exchange, BALTIMORE.
Marquette Building, CHICAGO.
Harrison Building, PHILADELPHIA.
Builders Exchange, BUFFALO.
Board of Trade Bldg., BOSTON.
St. Paul Bldg., NEW YORK.
Nat'l Bank Bldg., SAVANNAH, GA.

CHICAGO "AA"

1,000,000 Barrels Annually

Highest Quality

THE BEST THAT CAN BE MADE

Factory at Oglesby, near La Salle, Ill.

On C. M. & St. P. R. R.
C. B. & Q. R. R
I. C. R. R
C. R. I. & P. R. R by Switch.

MANUFACTURED BY

CHICAGO PORTLAND CEMENT CO.
No. 108 La Salle Street, CHICAGO, ILL.

SPECIFY

Edison Portland Cement

85% Thru 200 98% Thru 100

UNIFORMLY 10% FINEST GROUND CEMENT MANUFACTURED

SALES OFFICES:

New York, St. James Bldg.
Philadelphia, Arcade Bldg.
Pittsburg, Machesney Bldg.
Boston, P. O. Square Bldg.
Newark, Union Bldg.
Savannah, Natl. Bank Bldg.

Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Volume IX. CHICAGO, ILL., AUGUST 22, 1909. Number 2.

UTILIZATION OF WATER RESOURCES.

The People of Michigan Are Turning Waste Energy Into the Comforts of Life.

The Same Opportunities Are Nation Wide.

The conservation of natural resources is the most important question before the American people today. With the rapid depletion now markedly confronting us, and the development of the country but actually begun, the supply of raw materials for future generations of Americans, as well as the no distant future of people now living, is recognized and growing in importance.

Already steps have been taken by the government to guard the wanton waste of natural products. Chief among these is the forestry reserve, under the supervision of a special commission. The lessening supply of timber has made the creation of this commission necessary, and already it is doing good work, and substitutes in many cases have been found for lumber. Other important products are coal, oil and gas. The economical use of these products for fuel purposes is now a study of deep interest. Like the timber supply, future coal depends largely on conservation. It is rapidly diminishing, and it will be but a short time, comparatively, at the present rate of consumption, before coal as a fuel will be abandoned. Gas and oil have, whenever available, been used and are today being used to furnish fuel for many heavy manufacturing plants.

Eighty per cent of the power now used for mechanical purposes is produced from fuel. With the coal supply rapidly decreasing, the natural tendency is to increase the market price, and with a higher cost of fuel products will come a greater manufacturing cost. It is certain that five years from today the cost of coal will be higher than it is now. Coal is the principal item in the cost of steam power, and this will naturally increase the cost of production of every commodity by the same ratio. The way to meet this is by substituting another dependable energy for power, which will be cheaper, and this can only be done by supplying the manufacturers with the energy from the running streams of water when properly harnessed.

There are industrial centers where such a water supply is not available, and which spring up in locations near raw materials for manufacturing. Here steam power is cheaper today, as the cost of transportation is greater than the cost of steam power. At such places comparative costs vary, and steam power in the United States depends largely on the type of machinery used, nearness to and cost of fuel.

For a nation to be a leader in industry and trade, it must have the energy to put it in the first rank. It must have the energy of the people first and an external supply which can be harnessed and economically employed. The American people have plenty of the former, and whatever amount of this they may have, it cannot be of long standing without a proportional amount of the latter. Therefore the industrial progress of the United States depends on the amount of external power it can command.

The only perpetual motion that has yet been discovered is the flow of water. Heat causes an evaporation which forms clouds, and either falls in the form of snow, rain, or is deposited on mountain tops. Here again the heat acts on the snow and melts it, causing streams to flow and forming rivers, lakes and eventually the oceans. So this by nature is the one form or system of perpetual motion.

The opportunity for developing this energy and utilizing it is a problem which is beginning to be worked out. The generation of electricity by water power is second only to harnessing the clouds. There are manifold uses to which electricity can yet be put. The chief use is motive power, and under this comes the power to drive manufacturing plants, that the wheels of industry may be turned and raw products of every type manufactured into useful commodities. Second only to this is the motive power for transportation. Many cities and towns are now being lighted by the electricity generated by water power. The best example of harnessed water power is that of the Niagara Falls, which today by means of the power of water is generating 1,000,000 horsepower, with the ability to develop twenty-six times as much. This is not only for manufacturing purposes, but for operation of street railway systems and lighting and heating.

The evolution of water power has been as slow as the wheels which were turned by it in the early days of milling. History records the use of water power for grinding wheat and corn into flour and meal upon the first pages of civilization. We still find in some places the old mill with antiquated machinery, its wooden gates and runways. This intimates the slow development of larger enterprises in water power, the lack of machinery to generate and transform the energy, the lack of knowledge to engineer such enterprises, the lack of available materials substantial enough to control and store the water, and at the same time to construct such buildings as are necessary for the application of the power when developed.

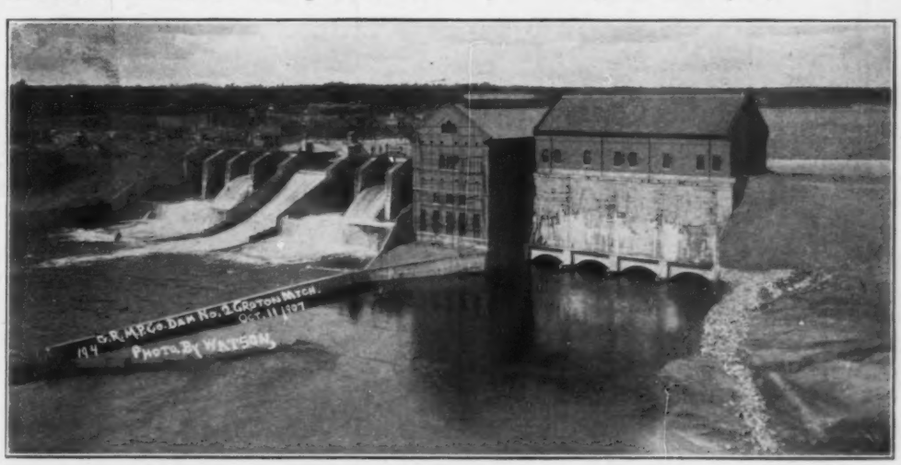
The development of American industries requires more and more of motive power. The question of economical power is the most important to many industries. The size of the manufacturing plant depends largely on this, and many large plants now seek the natural course of motive power, rather than closeness to raw materials.

Hydraulic engineering to harness water power has accomplished much in this direction; the proper materials to produce such substantial structures is another. With the development of concrete, its inherent adaptabilities for this construction make it the best material for the purpose. By its use dams and reservoirs can be built, that flood waters may be checked and stored for use when the flow is not so great. Of the same material, suitable structures are erected to hold the machinery required in the work of transforming the energy into electricity.

The men of the state of Michigan have taken advantage of the natural resources of that state, and there are today a number of power stations, generating electric power for the various industries, as well as motive power for transportation. Michigan does not by any means have all the natural advantages enjoyed by other states, but its enterprise has made use of that which is available, and in this respect she has taken the lead.

The greatest amount of undeveloped energy is in the Columbia River, with the Sacramento River and the St. Lawrence River, including Niagara Falls, next in order. Half a hundred rivers are available for power purposes, reaching practically every state in the Union, all waiting for the advent of the

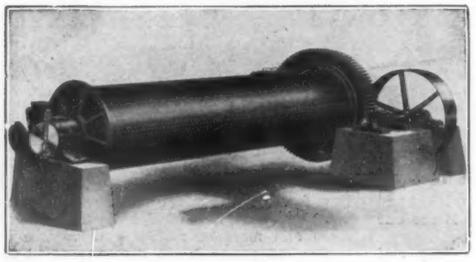
(Continued on Page 38)



GRAND RAPIDS, MUSKEGON POWER COMPANY'S DAM AT GROTON, MICH.

POWER AND MINING MACHINERY COMPANY

Cement Machinery



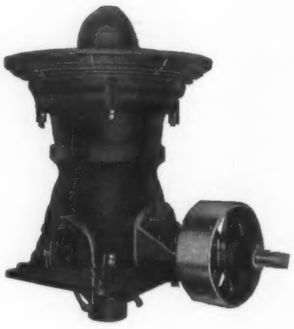
The most up-to-date and serviceable types of machinery and complete plants are our specialty.

McCULLY CRUSHERS

The world's greatest gyratory rock crusher. Built in 10 sizes and Mammoth with 27 in., 36 in. and 42 in. openings.

TUBE MILLS

For wet or dry grinding. Made in following sizes: 5 feet, 5½ feet, 6 feet and 7 feet diameter by lengths as required.



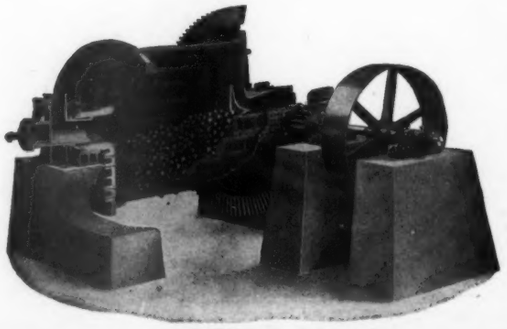
Ball Tube Mills

The mill without screens. Hence no shut-downs. Unexcelled for preliminary grinding of both raw material and clinker.

Our line includes the newest types of

Coolers, Dryers Rotary Kilns

Write for our interesting catalog 7-R. "Cement Making Machinery."



Sales Offices

CHICAGO
EL PASO
NEW YORK
115 Broadway

Works and General Office
Cudahy, Wis.
Suburb of Milwaukee

Sales Offices

MEXICO CITY
SALT LAKE CITY
SAN FRANCISCO
Sheldon Building

Hydrated Lime

Bulletin 30

THERE ARE INNUMERABLE

GOOD REASONS

Why you should install [at once]

The Kritzer Hydrating Process

THE chief and principal reason is, because Hydrated Lime has proven to be of far superior merit—much more economical and effective than common lump lime.

¶ Most Architects, Masons, Contractors, Dealers, Corporations and Owners know this—others are rapidly acquiring this knowledge.

¶ Consequently, the great and steadily-increasing demand for Hydrated Lime—which has already so shifted and changed the trade conditions that even now lump lime appears in perspective as if it never had been more than an incomplete or half baked product.

¶ And inasmuch as the demand has greatly changed, the supply must also change.

¶ Hence, keen and ambitious Lime manufacturers are hastening to install the KRITZER HYDRATING PROCESS—to keep abreast of the times and save to themselves the business of a lifetime.

¶ We have expert engineers and practical men to design, build and equip a complete Hydrating Plant for you—exactly suited to all conditions and needs of your locality.

¶ We will START you RIGHT!

¶ We will develop for you the one system that will produce the greatest returns on your investment—so that success and prosperity will be assured you from the start.

It's Time Right NOW for YOU to Get Busy!

¶ For full particulars on "the most successful process," write

The Kritzer Company

115 Adams Street, - CHICAGO, ILLINOIS

The Clyde Hydrator

is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery.

There are more of them in use than all others put together.

They have proven their merit under all conditions.

We will furnish full information, booklets and interesting data on your request.

"We like to answer questions"

CLYDE IRON WORKS

Manufacturers.

DULUTH, MINN.

The Quality That Never Fails

SUNFLOWER

PORTLAND CEMENT

Your Cement Needs Can Be Supplied Efficiently

Daily Capacity of 8,000 Barrels. Write today to

United Kansas Portland Cement Company

General Sales Office: 811 Commerce Building, Kansas City, Mo.

ROYAL PORTLAND CEMENT

ABSOLUTE UNIFORMITY

HIGHEST STANDARD

DAILY CAPACITY, 6000 BARRELS

The best technical and practical skill, backed up by an experience of years, operating the most modern plant in the country on the highest grade of raw materials, justifies our claim that

ROYAL IS PERFECTION

LET US QUOTE PRICES.

DIXIE PORTLAND CEMENT CO.

Sales Office, James Building

CHATTANOOGA, TENN.

Pennsylvania Portland

Stands for Quality

BERT F. ANDREWS

Sales Manager

Castalia, - - Ohio

High Tensile Strength
Light Uniform Color
FINELY GROUND

CASTALIA PORTLAND CEMENT CO.

PITTSBURG, PENNSYLVANIA

Plant: Castalia, Erie County, Ohio

Capacity: 2,000 Barrels Daily

Tell 'em you saw it in ROCK PRODUCTS

Art White Cement

Makes an

Attractive White Stone

Artistic, Ornamental, Decorative, Pleasing in Appearance and Profitable. It will pay you to investigate. Costs but little.

TRY IT

$1.50 per 95 lb. sack. $5.00 per barrel (380 lbs. net.)

Send check for sample barrel

The Bartlett Co.

Jackson, Mich.

Berkshire Snow White Portland Cement

BERKSHIRE WHITE PORTLAND "SNOW WHITE" TRADE MARK CEMENT

BERKSHIRE IS USED FOR ALL OUTDOOR AND INDOOR WORK WHERE A PERMANENT PURE WHITE EFFECT IS DESIRED

SOLD BY

George W. DeSmet

SOLE DISTRIBUTOR FOR

Vulcanite Portland Cement

Also for the CELEBRATED

WATERPROOFING COMPOUNDS

DEHYDRATINE

Damp and Water-resisting Paint. Waterproofs structures from cellar to roof.

SYMENTREX

(Liquid Concrete)

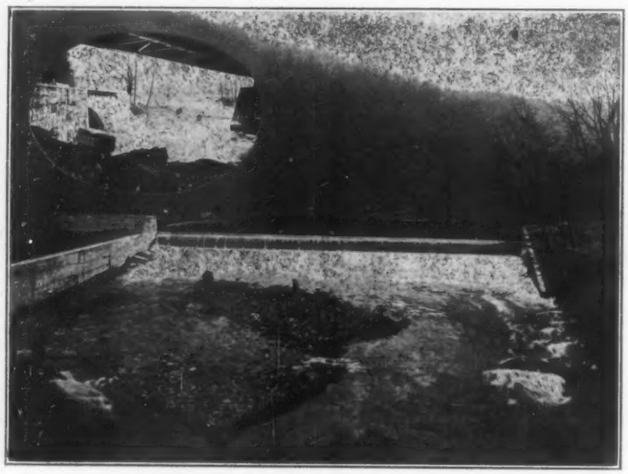
Beautifies and waterproofs brick and concrete surfaces.

HYDRATITE

This compound makes concrete impervious to water.

OFFICES:
317 CHAMBER OF COMMERCE

Chicago, Ill.



CONCRETE RUNWAY AND DAM

Analomink Paper Company
North Water Gap, Pa.

Nazareth Portland Cement

CHARLES WARNER COMPANY

SALES AGENT

Executive Offices, Wilmington, Del.

Land Title Building, Philadelphia, Pa.

1 Madison Avenue, New York, N. Y.

161 Devonshire Street, Boston, Mass.

WHITE PORTLAND CEMENT SANDUSKY PORTLAND CEMENT CO. SANDUSKY OHIO. STAINLESS.

Medusa Water-Proof Compound

Makes all Concrete Watertight

It Is Not a Wash

Illustration of Oil City, Pa., concrete reservoir which is being water-proofed with Medusa Water-proof Compound.

Write for pamphlet describing its use. Do not accept a

substitute, as there are many adulterated compounds on the market.

Sample of our Pure White Portland Cement sent on request.

Obtain our price on Medusa Portland. Annual Capacity 1,500,000 bbls.

Sandusky Portland Cement Co.

SANDUSKY, OHIO

BAY STATE
BRICK AND CEMENT COATING
as a Protection and Tint for Concrete

This Coating is made of a cement base, held in suspension by a volatile oil which evaporates on application. It contains no lead, is not affected by fumes of acids or gases and can be applied to a damp surface. It becomes a part of the material itself and will not rub, crack, peel, chip off or mildew.

It does not destroy the desirable distinctive texture of concrete.

It can be had in twenty-four beautiful shades ranging from pure white to dark green. It may be used as a finish coating for the ornamentation and protection of concrete, cement, stucco, brick or plaster on subways, cellars, mills, hotels, office buildings or large or small homes.

It has been endorsed by the National Board of Fire Underwriters as a fire retarder and will lessen the Insurance rate.

As a floor coating it prevents the powdering of cement floors, making a sanitary application for public buildings, hospitals, schools, libraries, etc. It can be readily washed.

It will not chip or scale off when applied overhead and thus prevents damage to delicate machinery.

Ask your dealer or address for sample card and particulars.

WADSWORTH, HOWLAND & CO., Inc.
Paint and Varnish Makers and Lead Corroders
98-99 Washington Street, Boston, Mass.

Your Concrete Waterproofed
Without Additional Labor

Concrete, the modern material used in construction, is unexcelled, provided it is waterproofed.

Un-waterproofed concrete is valueless. It absorbs moisture. It permits water to pass through it. This water and moisture freezes and expands. Thus, the concrete disintegrates.

Your concrete can be thoroughly waterproofed with practically no additional labor. AQUABAR will waterproof it.

A Bar Against Water

AQUABAR, as the name implies, is a bar against water. It is a colorless, paste-like solution.

AQUABAR is introduced into the concrete mass through the medium of water.

Coming in two-gallon cans—one can of AQUABAR to each barrel of water—it does **not** require **skilled labor to thoroughly waterproof your concrete.** Being dissolved in the water, it comes into contact with every particle.

Seals Every Void

As the concrete sets, the AQUABAR crystallizes and becomes part of the mass. It completely seals the voids between the sand and cement.

AQUABAR slightly retards the rapid setting of the concrete, but does not decrease its tensile strength.

AQUABAR does not interfere with the ordinary construction or laying.

A Permanent Waterproofer

AQUABAR completely waterproofs a concrete mass for all time.

AQUABAR steadily improves with age—its crystallizing properties becoming harder and harder.

Get These Two Booklets

If you are about to build a home, if you are an architect or a contractor, you should know the facts about waterproofing concrete.

We have two Booklets treating on this subject, which we want to place in your hands. Write us today for this information and prices.

Wisconsin Lime & Cement Co.
606 Chamber of Commerce, Chicago, Ill.
Manufactured by THE AQUABAR CO., Philadelphia, Pa.

Flint Pebbles and Buhr Stone Linings. **French Buhr Mill Stones, Solids and Built.**

J. M. Charles,
Sole Agent.
59 Pearl St.. NEW YORK, N. Y

Bolting Cloths, Dufour Swiss Silk, Fine Wire Cloth. **Mixing and Sifting Machinery.**

A Dawn of a New Prosperity

PEIRCE CITY WHITE LIME
THE QUALITY LIME

Brings prosperity to those who buy it, because it is the whitest, purest and strongest lime in the world, and sure to give satisfaction. Our barrels are made of the best cooperage, bound by steel hoops that do not break. Write us at once for prices.

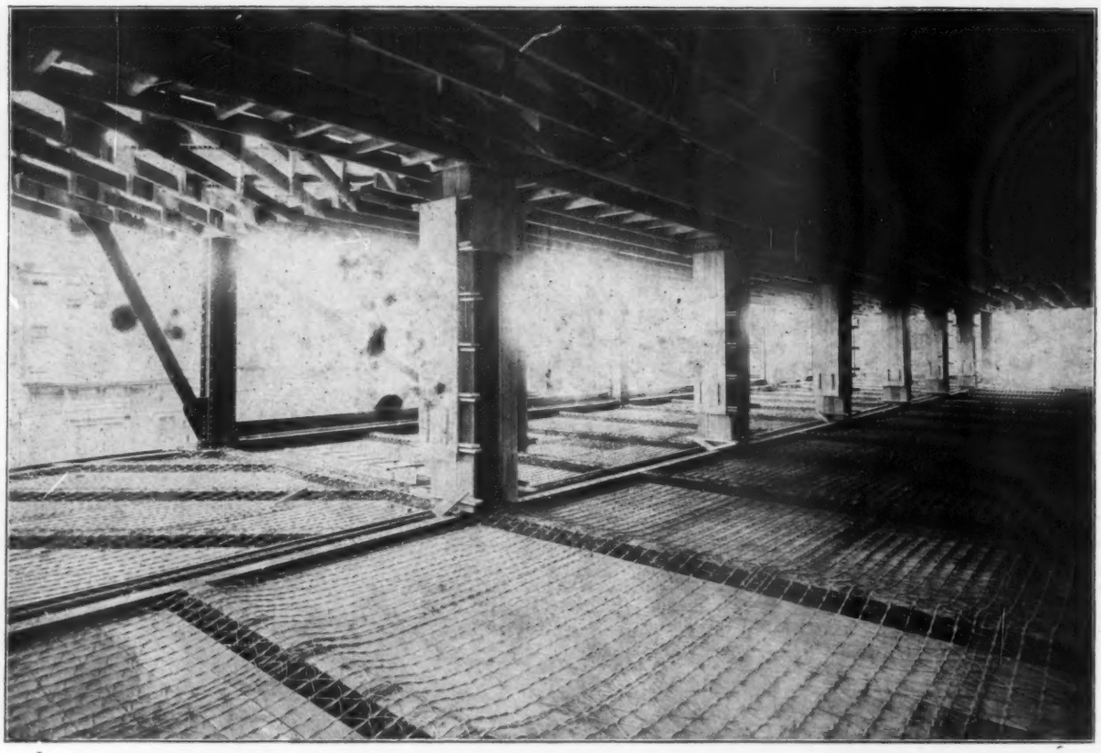
PEIRCE CITY LIME CO.
Peirce City, Mo.

"ANHYDRA"
The Perfect Waterproofing for All Kinds of Concrete Work

Thoroughly demonstrating experiments prove that this waterproofing preparation is the most economical and efficient thing of the kind ever offered on the market. It is permanent and constant in colors of the finished product, because it is made of natural materials of basic character that are unchanging. Permanent as the rock of ages. Quotations in any quantity.

Anhydrous Pressed Stone Co.
TELEPHONE MAIN 5278
134 Washington Street **CHICAGO, ILL.**

Triangle Mesh Concrete Reinforcement



WHITE BLDG., SEATTLE, WASH. Built by Stone & Webster Eng. Co. Triangle Mesh Reinforcement Used.

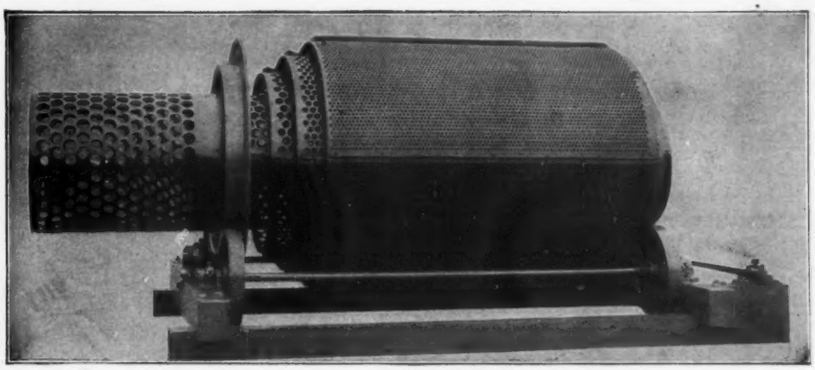
Made by

American Steel & Wire Co.

CHICAGO, NEW YORK, DENVER, SAN FRANCISCO.

WRITE FOR ILLUSTRATED PAMPHLET.

JOHN O'LAUGHLIN'S SCREEN



made solely by **Johnston & Chapman** is the

ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the **O'Laughlin** installed

NOW

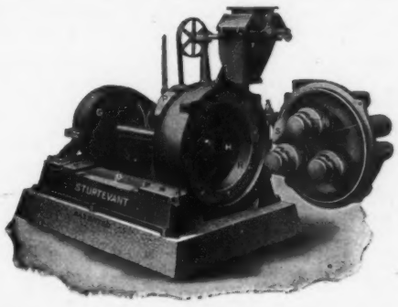
will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

JOHNSTON & CHAPMAN CO.

1333 to 1345 Carroll Avenue, CHICAGO, ILLINOIS

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.



A

RING-ROLL MILL

working in connection with a

NEWAYGO SCREEN

makes the simplest and most economical rock-grinding plant yet produced.

Feed, 1½ inch and Finer. Product, from 16 to 100 Mesh.

SEND FOR CATALOGUES Nos. 77 AND 79 in which is shown its superiority in

ACCESSIBILITY
ECONOMY
EFFICIENCY

STURTEVANT

New York
Pittsburgh

MILL COMPANY
Boston, Mass.

Chicago
St. Louis

→IN STOCK!!←

8-1½ YD. QUARRY CARS

For immediate shipment similar to cut below

36" GAUGE

14" WHEELS

These Cars are new all steel, equipped with self-oiling wheels and wood sub sill bumpers. Height 34" top of rail to top of car.

See catalogue No. 10-R for other types.

H. B. Sackett Screen & Chute Co.

4212-4226 State St., Chicago, Ill.

Amatite Roofing

SEND FOR A FREE SAMPLE

People who have "smooth surfaced" roofs on their buildings find it necessary to **paint them continually** to keep them serviceable.

This expense and labor can all be cut out by using Amatite. Its **real mineral surface** absolutely does away with **all** painting.

If you will write for a sample you will get an exact idea of what Amatite looks like. This will be immensely more satisfactory than any description we could give—no matter how minutely done. It is really the only fair way for you to judge.

Amatite is so thoroughly durable and reliable without any care or attention after you have nailed it on that, were its cost twice what it is, it would be still the most economical roof to buy. Its durability is unapproached.

It is easy to lay and requires no skilled labor to do the work.

In purchasing any ready roofing the question of whether it requires painting or not should be thoroughly considered. The busy man has no time to spend tinkering his roof every year or two. He wants to feel that when a piece of work of this sort is completed, he is through with it.

Write to-day for a sample of Amatite. Our nearest office will supply same at once with a booklet about roofing which will interest you.

Barrett Manufacturing Company

New York Chicago Philadelphia Boston Cincinnati
Minneapolis Cleveland Pittsburg New Orleans
Kansas City St. Louis

MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White Lime on the Market. Used and recommended by Sand-Lime Brick Manufacturers, Chemists, Soap and Glue Works, Plasterers and Masons.

Prices Cheerfully Submitted

Mitchell Lime Company

MITCHELL, :: :: :: INDIANA

Western Lime & Cement Co.

MILWAUKEE, WIS.

Sole Manufacturers of **LIMATE** The first and best Hydrated Lime in the market . .

In tensile strength for stone and brick laying and adhesive strength for plastering **Limate has no Equal!**

The thirteen lime plants of

Western Lime & Cement Co.

Have a total lime producing capacity of 10,000 barrels daily

Distributors of Best Portland Cements and Masons Building Materials. Correspondence respectfully solicited

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.
MANUFACTURERS OF THE

Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

The Ohio and Western Lime Company

WORKS AT
Huntington, Indiana
Marion, O.
Gibsonburg, Ohio
Fostoria, Ohio
Sugar Ridge, Ohio
Tiffin, Ohio
Genoa, Ohio
Limestone, Ohio
Lime City, Ohio
Portage, Ohio
Luckey, Ohio
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground Lime, Lump Lime, Fertilizer, Hydrate Lime, Cement, Plaster, Hair, Etc., Etc.

MAIN OFFICE: Huntington, Ind. Branch Offices: Marion, Ohio.

Capacity 8000 Barrels Per Day

The Kelley Island Lime and Transport Co.

CLEVELAND, OHIO.

Tiger Brand White Rock Finish the best known and smoothest working Hydrated Lime manufactured.

WRITE FOR PRICES

THE LARGEST LIME MANUFACTURERS IN THE WORLD.

"CONTINENTAL" DUMP CARS

Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

Continental Car and Equipment Co.

Works; Highland Park, Louisville, Ky. New York, 17 Battery Place

CONTINENTAL

CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner Brand Louisville Cement, Portland Cements and Building Materials.

St. Louis, Mo.

FOWLER & PAY

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick, Stone

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa
WAREHOUSE: Minnesota Transfer

MANKATO, MINN.

HIGH CALCIUM HYDRATE

The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

Sand Lime Brick Difficulties can be Simplified and Overcome by the use of our Correctly Hydrated Lime.

Cement Blocks can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate, free from magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

Finishing Lime As a finishing lime our Hydrate is unsurpassed. It is also a valuable addition to cement mortars, and for making mortar for brick and stone work.

Commercial and chemical requirements call for pure lime. We furnish a product of 98% analysis.

Kansas City **MARBLEHEAD LIME CO.** Chicago

SAVE MONEY, TIME AND LABOR
USE
Monarch Hydrated Lime

If Monarch Hydrated Lime wasn't better or cheaper than lump lime nobody would buy it. As a matter of fact it is both.

Monarch Hydrated Lime costs less delivered, can be thoroughly soaked in twenty-four hours, doesn't have to be screened, carries more sand, gauges with a third less plaster, spreads further and easier and will not air slack.

That's the whole story. Now try it. Compare the cost and the results with those of ordinary lime—and we have a new customer.

Monarch Hydrated Lime is made in Carey, Ohio, where the limestone is just right and the shipping facilities good. Our prices will satisfy you.

We also crush stone for all purposes.

THE
National Lime & Stone Co.
CAREY, OHIO.

Burton Powder Co.

MANUFACTURERS OF

Good Luck Dynamite

TRADE GOOD DYNAMITE LUCK MARK

AND

Blasting Powder

Dynamite Factory: New Castle, Pa.
Powder Mill: Quaker Falls, Pa.
Main Office, PITTSBURGH, PA.
Western Sales Office, Chicago

"IF IT IS **LIME** WE MAKE IT"

Lump - Barreled - Hydrated - Ground
STRONGEST IN OHIO.
We are not connected with any Trust or Combination.
WRITE US
PHONE US **The Scioto Lime and Stone Company, Delaware, Ohio**

PATENT SOAPSTONE FINISH
PLAIN AND IN COLORS FOR WALLS AND CEILINGS

Patent Soapstone Mortar
Prepared in any Color for Laying Pressed and Enameled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO
DODGE, Proprietor CHESTER DEPOT, VT.

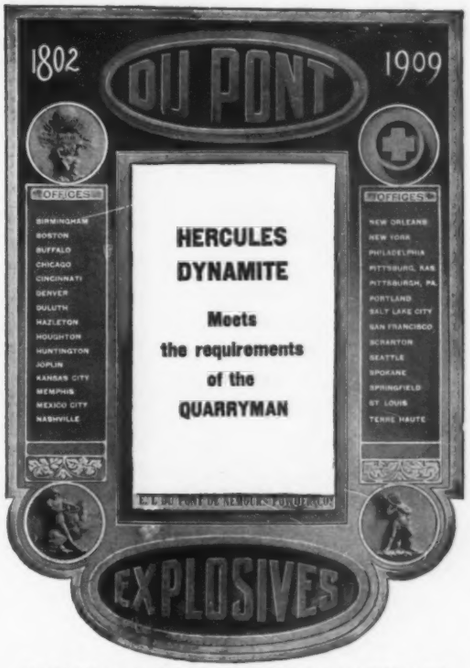
NEW JERSEY LIME CO.

NEW JERSEY LIME COMPANY BRICK LIME HAMBURG, N.J.
NEW JERSEY LIME COMPANY PLASTERING HAMBURG, N.J.
NEW JERSEY LIME COMPANY FINISHING HAMBURG, N.J.

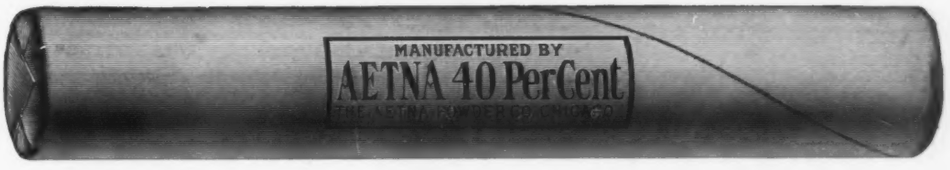
HAMBURG, N. J. MANUFACTURERS OF McAFEE, N. J.

BUILDERS' LIME CHEMICAL LIME
HYDRATED LIME

HAMBURG, N. J.



COPYRIGHTED BY E. I. DU PONT DE NEMOURS POWDER COMPANY, 1906.



AETNA DYNAMITE

The Standard Explosive
Always Full Strength
Always the Same

Send for new 66 page Blasting Manual

MADE BY

THE AETNA POWDER COMPANY

143 DEARBORN STREET, CHICAGO

Bank of Commerce Building
ST. LOUIS, MO.

CHATTANOOGA, TENN.
XENIA, OHIO

Woodward Building
BIRMINGHAM, ALA.

The Bradley Producer

Gas Process for Burning Lime.

Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

Does that look like economy to you?

RESULTS GUARANTEED

Duff Patents Company Frick Building Pittsburg, Pa.

"THE ROOFING TILE WITH ARCHITECTURAL STYLE"

OLDEST

Concrete Roofing Tile Machinery

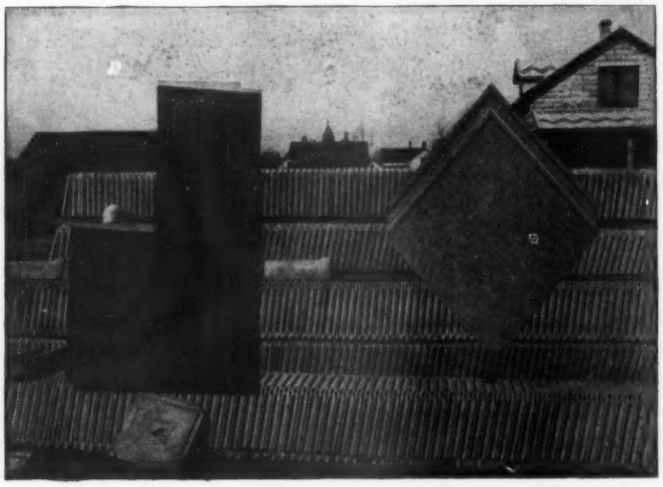
Manufacturers in United States

Europa and New Era Concrete Roofing Tile

Handsome, Sanitary, Enduring, Economical

The crowning triumph of mechanical skill and genius

Costs less than any other Roofing Material, presents a much handsomer appearance; outwears all other Roofing.



Europa and New Era Concrete Roofing Tile, Showing Different Size and Form of Tile

Made in practical sizes; all colors; not affected by heat or cold; does not absorb the carbonic acid of the atmosphere; will not radiate heat. Lowers Insurance Rates. *The Manufacturing of Concrete Roofing Tile* is one of the most *profitable industries* in the country. We Build Roofing Tile Machinery. Information cheerfully furnished. Write for catalogues.

THE AMERICAN CEMENT ROOFING CO.

623 Columbus Savings & Trust Building COLUMBUS, OHIO

Tell 'em you saw it in ROCK PRODUCTS

Nuttall Gears

The highest development in the art of gear making. That's what they all say.

Nuttall—Pittsburg

If in a hurry, wire us.

THE FULLER ENGINEERING CO.

DESIGNING, CONSTRUCTING AND OPERATING ENGINEERS, ANALYTICAL CHEMISTS

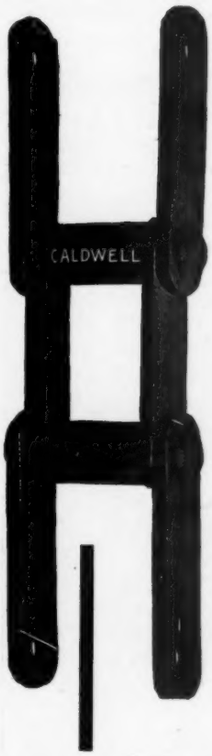
CEMENT MILLS A SPECIALTY

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA.

MACHINERY

—FOR—

Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 28.

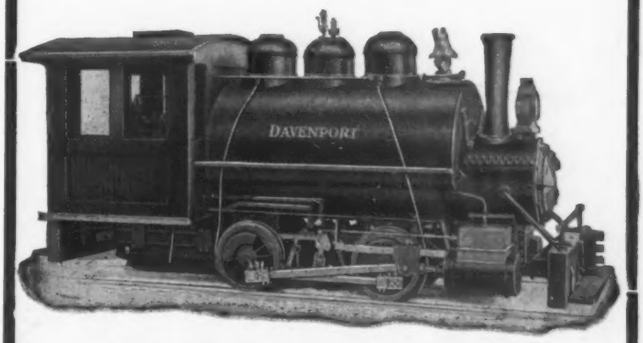
H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St., NEW YORK CITY

Do You Have Cars to Haul?

The Davenport Locomotive Will Save Money



Special Designs for Special Purposes

Any Size, Any Gauge, Any Weight

Write for Prices and Particulars

DAVENPORT LOCOMOTIVE WORKS

DAVENPORT, IOWA

Limestone and Shale

FOR MANUFACTURE OF

Portland Cement

ON THE

Illinois Central Railroad

IN THE

WEST AND SOUTH

Coal, Water and Good Labor

For Full Particulars Address

J. C. CLAIR, Industrial Commissioner

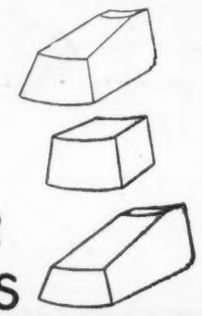
I. C. R. R. CO.

No. 1 PARK ROW, CHICAGO

ROTARY CEMENT LINERS.

ASHLAND FIRE BRICK CO.
ASHLAND, KY.

IRONTON CROWN.



LIME KILN LININGS.

GROUND CLAY FOR WALL PLASTER AND BOILER SETTINGS

DIRECT HEAT

DRYERS

—FOR—

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

American Process Company
68 William Street, NEW YORK CITY

RUGGLES - COLES

DRYERS

RUGGLES-COLES ENGINEERING CO.
NEW YORK CHICAGO

The Cummer Continuous Gypsum Calcining Process
See Other Advertisement, Page 2
THE F. D. CUMMER & SON CO. Cleveland, Ohio
Seven plants in successful operation producing about 1,500 tons per day.

THE WINANT COOPERAGE CO.
Staves, Hoops and Heading for Lime, Cement and Plaster Barrels
MILLS: Pennsylvania New York Maine Virginia Ohio
190 CEDAR STREET NEW YORK, N. Y.

"We are pleased to say that the returns from our Rock Products advertising have been very gratifying. Very truly yours,
N. J. Morehouse,
Extract from letter. Waterloo, Iowa."

Farrington Expansion Bolts

The most secure fastening in concrete as well as in stone. Send for Samples.
H. Farrington, 45 Broadway, New York

For Immediate Shipment—New and Rebuilt Machinery

One rebuilt Western Wagon Loader.
Gyratory and Jaw Crushers of all kinds and sizes.
One Steam Hoist complete with Cable and Derrick Irons.
Two 12 H. P. Russell Traction Engines.
One 30 H. P. Stationary Randall Engine.
One 12-ton Iroquois Steam Roller.
Headquarters for Sterling Wheel Barrows, Concrete Mixers, Rollers, Dump Wagons, Scrapers, Quarry and Gravel Pumps.

Write for Catalogues and Prices.

The Williams Contractors Supply Co.
COLUMBUS, OHIO.

C. K. WILLIAMS & CO.
EASTON, PA.
The Largest Manufacturers in the U. S.
BRICK AND MORTAR
COLORING
OF ALL SHADES
CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES CHEERFULLY FURNISHED ON APPLICATION.

Lime Kilns and Plant of Blair Limestone Co., Canoe Creek, Pa.
Designed by
Henry S. Spackman Engineering Company
42 N. 16th Street Philadelphia, Pa.

ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume IX. **CHICAGO, AUGUST 22, 1909.** **Number 2.**

Publication day, 22nd of each month.

THE FRANCIS PUBLISHING COMPANY

EDGAR H. DEFEBAUGH, PRES'T.

Seventh Floor Ellsworth Bldg., 355 Dearborn St., Chicago, Ill., U. S. A.

Telephone Harrison 8086, 8087 and 8088.

EDITORS:

EDGAR H. DEFEBAUGH. FRED K. IRVINE.

ASSOCIATE EDITORS:

BENJ. F. LIPPOLD. HENRY C. WHITTAKER. BERNARD L. McNULTY.

JACOB HOLTZMAN, 916 Rothschild Building, Philadelphia, Pa.

Communications on subjects of interest to any branch of the stone industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....$1.00

In the Dominion of Canada and all Countries in the Postal Union..... 1.50

Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.

Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

There is a mighty rush in the whole range of building materials. "Such activity has not been known in years." This is the report that comes to ROCK PRODUCTS from every crossroads and from the men who supply the materials for the construction work of the country.

The warehouses that have collected cobwebs are rapidly being emptied by the deliveries of rush orders, and teams that droned through the streets but thirty days ago are straining to crowd in an extra load to the big day's business. This applies to every item, including the great staples of cement, lime, plaster, sewer pipe and brick as well as the many specialties for the use of the practical builder which have been introduced in the last few years.

Building material men are having their innings. The manufacturing concerns who have carried heavy stocks all summer begin to realize that the mills will have to work overtime to supply the enormous demands that are being made upon them.

The crop money is beginning to flow to all parts of the land, and in cases where this is not so the assurance that the payments for the biggest yield that the land has had in years is equal to the money itself to supply the funds with which to complete building operations, engineering works and public improvements that have been hanging fire in a dilatory way since spring opened. It is unfortunate that this demand could not have been spread over the earlier months of the building season, so that with more deliberate care the heavy tonnage could be more profitably handled, for haste always makes waste, and the crowding of six months' activity into two and one-half is a process which only progressive and energetic American dealers are capable of handling at all. Let us be thankful that the tide is turned and that the folds of the banner of prosperity are now well shaken out and nailed to the mast head of business, where, let it float continuously!

Brick always has and always will be an important factor in the building material business. The recent statistics published by the United States Geological Survey contain one promising feature. Front brick and the commons of good grades have increased both in volume and in value, while the low grade commons have decreased both in number and in value by even a greater ratio. These low grade common brick have gone from bad to worse in the last few years until now they really contain no structural values either for compression, tensile strength, fire resistance or density. They are unsightly, and when the tremendous cost of putting them into a wall in most of the markets of this country is taken into consideration, they are at the same time about the most expensive material that could be selected. We congratulate the discriminating building public on the facts exhibited in the Survey's very complete report.

When business adjourns at Washington it is remarkable how active the rest of the country can be.

A cement salesman nowadays can be distinguished by the twinkle in his eye and the hurry he is in all the time. It is easy for him, because he has got a long line of orders located and merely has to make connections to gather them in.

While there are a few bad spots, as a whole the lime trade is in good condition from the manufacturers' standpoint. With the consumption there has been little change in years, with the exception of the introduction of the hydrate. Hydrate lime is steadily growing in importance in the markets, and its popularity is well founded upon definite economics and other practical advantages.

The third annual cement show, which will be held in Chicago next February, will unquestionably be the most important occasion of the kind that has ever occurred. The joint interests of all the national organizations centering upon the cement industry will take part in this occasion, but the exhibit feature will be conducted upon a grander scale than has ever before been attempted. Chicago is the natural place for such a convention to be held on account of its location and superior railroad and hotel accommodations. A very large percentage of the entire cement army of the land will participate in that convention. It is well to make plans in advance, so that your attendance can be assured.

There is always a call for more practical experts in the building trades. At no time has there ever been a shortage of common labor; in fact the building and engineering contractors are beset with hordes of foreigners and others who do not know how to do anything. The skilled mechanic in every line is becoming scarcer with each succeeding building season, and more and more dependence is placed in machinery, but even machinery requires intelligence to operate. The technical schools are turning out plenty of bosses, but at the present rate there will soon be nobody to boss. The suggestion of the trade school is a good one. Wherever it has been tried in practice it has shown good results. There is a need for many more of them.

If you chance to know of some one who intends to build a summer cottage by the seaside, in the mountains, or in the lake country, don't hesitate to remind him that safety from fire is the first requisite. No matter what the outlay in money may be, nor how elaborate or how modest, it is dedicated to love and affection, in the sweetest sentiment of modern family life. To jeopardise the lives of those most dear in an isolated wooden house is unpardonable carelessness. Here is where the cement interests and concrete men generally can do some good missionary work—more important than any other in fact. If you want to help just send ROCK PRODUCTS the names of people you know who expect to put up summer cottages this year.

Crushed rock will always be the best obtainable material for road metal. It is the only good material plentiful enough and cheap enough for this important factor of civilization. A few years ago it was considered that the proportions of sizes of rock as well as the methods for road building had reached a solution—that the specific and relative economies were well understood for all time, and that there remained nothing more to do but to get busy and put in the roads as fast as possible. All of this has been upset by the advent of the automobile. It has unquestionably come to stay, which puts the road specifications for the future up in the air. There will be some changes to provide for this new condition. Well qualified experts are working and experimenting now and the time is not far off until the readjustment is reached. While there will likely be little change in the main road bed, the top dressing and finishing process will be radically revised. A dust-proof, water-proof and incidentally costlier road will result. Both concrete and tar products will be used extensively.

EDITORIAL CHAT

Men to Avoid.

Who has not heard or read of Henry Clews, one of the striking characters of Wall Street, without mentally commenting on his views, wondering what sort of an individual the famous financier would prove to be at close range? A pretty good general idea may be obtained from what he has written regarding the men whom he advises to avoid. Mr. Clews has, no doubt, tested his black list; probably the reader will agree with him in the main.

The kind of men Henry Clews would avoid are:

He who unjustly accuses others of bad deeds.
He who never has a good word for anybody.
He who is always prating about his own virtues.
He who, when he drinks, drinks alone.
He who boasts of the superiority of his family.
He who talks religion down town in connection with his daily business affairs.
He who talks recklessly against the virtue of respectable women.
He who runs in debt with no apparent intention of paying.
He who borrows small sums on his note or check dated ahead.
He who won't work for an honest living.
He who looks down on those who work.
He who imputes bad motives to those trying to do good.
He who betrays his confidence.
He who lies.
He who is honest only for policy's sake.
He who deceives his wife and boasts of it to others.
He who gets intoxicated in public places.
He who partakes of hospitality and talks about it behind the entertainer's back.
He who borrows money from a friend and then blackguards the lender.

A ROCK PRODUCTS man saw R. D. Bissonette, sales manager of the New Ætna Portland Cement Company, in Detroit recently. He said that their mill is busy shipping cement, but that prices have been shot to pieces in that market, though he looks for an advance before long.

J. E. Bartlett, of Jackson, Mich., treated the ROCK PRODUCTS man to a ride in his big touring car recently, and when it comes to speed he is certainly on the job. The roads were a little rough, and with the speeding Mr. Bartlett bumped the bumps as an aid to digestion.

J. N. Shove, the genial secretary of the Peninsular Portland Cement Company, is an enthusiastic gardener, and has a small sized farm at his home. Speaking of farmers, Mr. Shove says that he believes the Portland cement industry will find that the farmer is the ultimate consumer of a greater amount of cement than any other user.

Bert Swett, of the Lehigh Portland Cement Company, was a Chicago visitor last week. He is optimistic over the business outlook and predicts that October will see all the mills busy. A contract was recently made for 14,000 barrels of Lehigh cement to be used in the B. F. Avery & Sons plow factory, Louisville, Ky.

H. Huennekes, who was actively engaged in the promotion of the sand lime brick business a number of years ago, is stopping at the New Hoffman House, in New York City, and doubtless looking for new worlds to conquer in the sand lime brick line.

At the signal from William H. Gillen, well-known Milwaukee breakwater contractor, the largest caisson ever constructed on the lakes was launched in Milwaukee harbor the other day. The launching was perfect in every respect and nothing hampered the big mass of concrete from taking the plunge into the water.

The 350-ton mass of concrete slid gracefully down the launching ways and plunged into the water. It disappeared beneath the water for a second, when its buoyancy manifested itself and the concrete reappeared on the surface. The big block was towed into shallow water, where it will be kept until the piles on which it will rest are driven. The caisson is one of the large four blocks that will be used in the construction of the south pier at the harbor entrance.

The caisson is the invention of Major Judson, United States Engineering Corps. The blocks are constructed hollow in such a manner as to give them buoyancy. They are then towed to the place where it is intended to use them, where they are sunk by filling them up with more concrete.

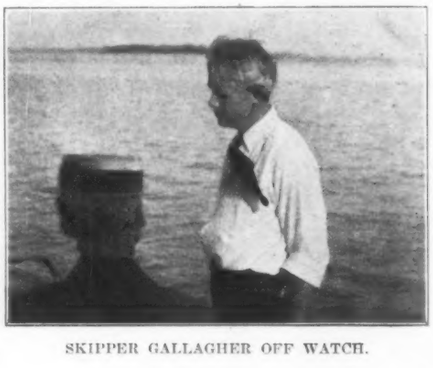
The caisson just launched is 54 feet long, 13 feet wide and 14 feet high. In all fourteen caissons will be constructed for the breakwater. Four will be large, while ten smaller ones will weigh 180 tons. Three caissons have been finished so far. A complete description of Major Judson's epoch-making method of molding hollow concrete caissons appeared in ROCK PRODUCTS for April, 1908.

R. C. Penfield, of New York, the brick magnate, has been showing some of the sleepy-heads how to go some. His leadership has been won by earned runs.

July 1st this year Julius M. Martin was appointed assistant general manager of the Ohio and Western Lime Company, with headquarters at Marion, Ohio. Mr. Martin was in the employ of the company at Huntington, Ind., for a number of years. He is Mr. George B. Christian, Jr.'s successor, who sent in his resignation to give his undivided attention to the White Sulphur Stone Company of Delaware, Ohio, which he owns, with general offices in Marion, Ohio.

Dan Evans, of the Evans Lime and Stone Company, Marion, Ohio, states that his concern is full of business and is running up to capacity. In fact he only wanted some more help in the quarry department now to increase the output.

The veto of Mayor McClellan, of New York, of the new building code for the metropolis amounts to an announcement in favor of real progress and a defeat for the "interests" that would saddle obsolete methods of construction and antiquated materials upon New York builders. New York is entitled to the best that modern developments can produce. There are others.



SKIPPER GALLAGHER OFF WATCH.

Everybody will recognize the picture of Al. Gallagher, of Maumee Chemical Company, of Toledo. Those who have seen him in full dress on memorable banquet occasions must not be shocked at the costume. He is a yachtsman of the right stripe, and this snapshot shows him in sailor rig aboard his favorite ship on Lake Erie.

Franklin Henshaw, sand lime brick engineer, has joined the force of the Allis-Chalmers Company, and will work in their special line as well as general commercial engineering. Mr. Henshaw has some considerable achievements to his credit.

J. C. Van Doorn, the Northwestern sales agent of the Universal Portland Cement Company, with headquarters at Minneapolis, has been taking his vacation in the shape of a trip through the Black Hills, but of course by habit he was keeping his business eye open just the same. He says business has been exceedingly good in the Northwest, and the merchants generally are expecting the prosperous times to continue. He had a ten days' trip riding in a wagon, on horseback or climbing a-foot over the hills and mountains and found that part of the country to be a very delightful place for one to pick up when taking their vacation as the altitude after getting past the foot-hills is an average of about 5,000 feet.

Charles C. Kritzer, the dean of hydrated lime, has recently taken a tour of his customers' operations. They are all so busy and enthusiastic over trade indications for the future that hydrating has proved its merits in the markets. Kritzer has made those "two blades of grass grow where there was only one before."

Chicago in Danger by Fire.

The danger of a conflagration in Chicago is pointed out by John Erickson, the city engineer, in a recent report made to the commission of public works. The great fire of 1871 which destroyed 17,430 buildings and caused a total property loss of $168,000,000, was the biggest that had occurred in this country or Canada between 1820 and 1905, but Mr. Ericson believes there is the possibility of much greater fire loss now, and says that Chicago is ill prepared to protect itself. The water supply is insufficient, and the buildings such as would burn easily.

Charles F. Harwood, sales manager of the Superior Portland Cement Company, Cincinnati, Ohio, was in Chicago this week. He reported improvement in business and anticipates the volume of "Superior" brand of cement will be good during the fall months.

A. W. Eisenmeyer, of the Granite City Lime and Cement Company, Granite City, Ill., favored our sanctum with a visit recently. He reports heavy activity in supplies of all kinds. His modern paving outfit is also working up to capacity, and doing well. He remarked that from this time on till snow flies it will be a matter of getting the goods and hauling them to the jobs.

James W. Wardrop, the able and extremely active secretary of the National Builders' Supply Association, is the kind of a man that will not allow any grass to grow under his feet. He is always going some, and the supply interests are all taking notice of his speed, and more than that, energetically and consistently backing up his efforts.

F. C. Spencer, the assistant manager of the Urschel-Bates Valve Bag Company, recently remarked: Our bag factory, both in our specialty of valve bags and also the open mouthed paper bags, has shown a steady increase. We feel like the honest quality we are putting into our goods has no little to do with the quality.

W. N. Durbin, of the American Brick Machinery Company, of Chicago and Anderson, Ind., is taking his vacation with his family in the Michigan lakeside resorts.

Thomas D. Cone, of Toledo, of late connected with the Ohio Steel Wheelbarrow Company, which recently sold out to the Georgian Manufacturing Company of Rome, Ga., will engage in the business of manufacturers' agent, representing machinery specialties for the concrete trade, as well as supplies for the same.

A curious fact about high-grade mortar colors is that their use actually strengthens and improves cement and concrete work. The theory of this is that the impalpably fine and even grains of a mortar color, like Ricketson's "Red Brick" brand, fill in the pores of the cement so as to make it absolutely close and weather proof. To obtain this result it is necessary, of course, that the mortar color itself be absolutely stable and unchanged by weathering or the cement will soon lose its tough denseness. Ricketson's colors have stood the test of over twenty years' exposure without a sign of a change.

The Anchor Concrete Stone Company, Rock Rapids, Iowa, builders of the Anchor block machine, say:

"The well-grounded objection to the construction of buildings from concrete blocks with cement connections between the outer and inner walls has been wholly overcome by the Anchor continuous air space block. All wise manufacturers of concrete have now concluded that the only way to prevent frost and moisture from penetrating the walls built from concrete, is to build a wall absolutely divided and this simple principle was early taken advantage of by the Anchor design.

"One good feature that the manufacturers of the Anchor machines claim for their block is that it is simple in construction and easy to lay for the reason that there are only two places for the mason to deposit his mortar before laying the block. Another advantage is the durability and simplicity of the mortar joints at the ends of the block.

"Another feature of the Anchor's blocks which appeals to prospective purchasers is the fact that the inner and outer walls can be made as thick or as thin as the builder may desire and the front slab of the block can be colored if desired, which avoids any perpendicular seam between the colored concrete and the main part of the block, which seam in the course of years is apt to separate and allow the face to fall off."

They have an attractive catalogue and descriptive literature which can be had by interested parties for the asking.

Methods of Attaching Shafting and Machinery in Reinforced Concrete Buildings.*

By Wm. M. Bailey, M. Am. Soc. C. E.

The manner of attaching shaft hangers, pipes and machinery to beams and floors in a factory or mill building of the reinforced concrete type is a detail of considerable importance, so much so in fact that often if no satisfactory scheme is explained to the owner he will not consider the use of reinforced concrete beams in his proposed building. In the ordinary mill constructed factory with wooden or steel floor beams there is no special difficulty in attaching hangers for shafting and pipes or fastening machinery to the beams and floors in any desired location without any previous plans necessary and at a minimum cost, but in a concrete building the conditions are entirely different, and it is much better to adopt some scheme for the installation of the machinery, piping, etc., before the building is constructed if we wish to obtain the best results in all respects.

Shaft Hanger Supports.

Appliances for conveniently supporting hangers for pipes and shafting and for supporting motors and other machinery from the beams and ceilings probably requires more previous planning and careful selection than is necessary for other phases of this subject. The method recommended by the engineer and adopted for use with this type of building should be one designed to best meet all the requirements so far as can be known of the building and its later equipment. It should be inexpensive, compact and simple in form, with not too many separate parts, and as flexible as possible to accommodate future changes in the line of shafting, additions or improved machinery, etc.

I have endeavored to collect and present for your consideration and discussion the different systems which are used by specialists in concrete construction.

One of the most common methods employed is to attach a hard pine timber to the under side of the concrete beam. This may be in any desired length, to which the shaft hangers are bolted or lag-screwed in their exact position. The timber can be secured to the bottom of the beams by bolts built into the concrete about four feet on centers, projecting a threaded end and nut below, or by use of sockets, inserts, sleeves and washer nuts imbedded in the concrete, into which the timber pieces are afterwards fastened. If the bolts are used care should be taken to set and keep them vertical, also have them thoroughly anchored into the upper part of the beams.

At this point Mr. Bailey used a number of illustrations to show the various successful methods of using embedded bolts and projecting stirrups. Each of these he analyzed and brought out their relative values.

When a bolt is used through the beam near the top a metal sleeve with a wooden core is concreted around to form the hole. These openings also permit the passage of pipes and wires. Large holes left in certain parts of beams and girders might cause weakness in the compressive side of the member. If so, an iron pipe sleeve of sufficient thickness should be used. It is rather difficult to always locate these holes through the beams during construction to conform exactly with future changes. Therefore, the system using the hooked hanger bolt in the side of the beam is more satisfactory and is the one adopted for use in the Clair Publishing Company's building, Brooklyn. If the holes for the hook bolts are cut with a pneumatic drill it can be done at a nominal cost.

Wires and Sprinkler Pipe Supports.

Blocks of wood are often set in the under side of concrete slabs to which are fastened wires and small sized pipes and wire conduits. This is not considered a suitable or permanent support. It is much better practice to use either expansion bolts or locate and place adjustable sockets and inserts in the concrete work. Often the conduits for wires are placed on the centering and imbedded in the concrete slabs. If the pipes are not too large and are located with due regard to the reinforcing metal there is no serious objection to this method. Piping for sprinklers is generally planned before the concrete work is started. It is therefore a simple matter to place inserts or sockets where needed in the concrete work, to which the pipes can be readily attached later on.

Machinery Fastenings.

Large machines with heavy bases setting on the floor seldom require any special fastenings. It is usually sufficient to thoroughly grout with Portland cement mortar the base of the machines to the concrete by expansion bolts or similar methods after the floors are concreted, the cost of drilling for these fastenings being a small item of expense. Sometimes, however, it may be necessary to bolt through the floor in order to hold certain machines rigidly. If through bolts are required, the holes should, if possible, be located before the floor is concreted; otherwise in cutting these holes through the floor reinforcing bars are liable to be encountered, which would cause more or less difficulty and might lead to serious trouble if cut off. In most cases machinery runs better and lasts longer if placed on solid foundations, and reinforced concrete floors are admirably adapted for machine shops. There are, however, exceptionable cases where machines seem to require more or less give on their bases in order to be most satisfactory in working and endurance. This is particularly true with certain textile machinery, and where a cushion is required a wood finished floor can be laid, or wooden timbers or bolsters can be fastened to the concrete flooring. It has also been suggested to use sheet cork or linoleum carpet under the case of machines in order to give elasticity of movement and also lessen the noise of running machinery.

*Paper read at the convention of the National Cement Users' Association, held at Cleveland, Ohio, in January, 1909.

Patenting Subway Plans.

The preparation of plans constitutes a large portion of the paying business of architects and engineers. As a rule, this is done under a regular contract, secured by direct negotiations, or as the result of a competition. The securing of a commission through the presentation of a patent covering the most feasible means of construction, under given and fixed conditions, is something quite new in this field of endeavor. Such, however, is the plan of George W. Jackson, of Chicago, who built the Illinois Tunnel Company's bore in that city. As a result, he says, of eighteen months' work, Mr. Jackson formulated and recently secured a patent on plans for constructing a traction subway. The application of the patent is, of course, as wide as the United States, but the plans are made to fit one city only—Chicago. Mr. Jackson admits that the municipality is under no obligation to follow his plan, incidentally paying him a royalty for the use of his patented scheme, but he insists, and that with an excellent show of sincerity and faith, that it will be forced to do so, or else lose a vast sum of money by adopting different plans.

In other words, given the Chicago subway traction problem as a starting point, Mr. Jackson seems to have patented a scheme that is best adapted for solving it and keeping it solved for a long term of years, until the city attains a population of 5,000,000 people, he confidently maintains. The city authorities seem disposed to treat Mr. Jackson and his patent in a light and airy way, maintaining that the idea of patenting a subway is absurd on its face. In answer to this Mr. Jackson exhibits his patent, with its attendant seals and official signatures. He admits that the municipality can employ the plans used in constructing the New York subway, but suggests as an attendant and embarrassing difficulty, that they are in no way adaptable to Chicago, the physical conditions, with reference to the layout of streets in particular, being radically different. The best explanation that can be presented of Mr. Jackson's plans is the patent itself, which is as follows:

"Patent No. 922768 underground subway for street railways, etc.

"1. A subway for traction use, comprising of a bottom and side walls and a roof and provided with a passage for car tracks and laterally at one side of the roof, with a lateral passage having means for supporting utility appliances, a passage immediately beneath the roof of the subway arranged to receive utility appliances extending either longitudinally or transversely of the subway.

"2. A subway built beneath the streets for traction purposes, comprising a floor, sidewalks and a roof, posts supporting the roof from the floor arranged in rows to divide the subway into passageways for car tracks and lateral spaces having means for supporting therein public utility appliances, and said car tracks being separated at the longitudinal center of the subway leading from the center of the street to said central platform.

"3. A subway built beneath the streets, the central portion of which is divided into two passages to receive car tracks and a central space or walk between said car tracks extending between streets which intersect the street beneath which the subway is built to provide a passage in the subway from one intersecting street to another.

"4. A subway for traction purposes, comprising a floor, sidewalks and a roof, and posts supporting the roof from the floor and arranged in rows to divide the subway into centrally located passages to receive car tracks and two lateral passages having means for supporting therein public utility appliances and a horizontal subway roof between said car tracks passages and the main roof, and said aisles being provided in line with said horizontal position with horizontal supports, the whole dividing the upper part of the subway into a space through which is adapted to extend public utility appliances of streets which intersect subway and into which are adapted, to be carried or deflected, certain of the public utilities carried in the lateral passages or aisles.

"5. A subway for traction purposes, comprising a floor, side walls and a roof, posts supporting the roof from the floor and arranged in rows to divide the subway into a car space and a lateral passage or aisle, provided with means for supporting therein public utility appliances, a storm water sewer, arranged in said aisle, a catch basin located in the floor of the subway into which water from the subway floor is drained, and a pump for pumping said water from catch basin into the storm water sewer."

Mr. Jackson says that the plans are the result of eighteen years of practical experience as a tunnel builder and eighteen months' careful study of the Chicago problem. They can be carried into effect, he claims, at an expense of $50,000,000. "My system," he said, "provides for eight loops and will accommodate just eight times as much traffic as, for instance, the present elevated loop. My plans will take care of Chicago's population for 150 years to come. Also they give a sidewalk running continuously through the entire system, so passengers can be taken on at any point. Besides this they cover a union of subways and conduits for various public utilities."—*American Contractor.*

Topographic Maps and Folios and Geologic Folios Published by the United States Geological Survey.

The work of mapping the United States has been intrusted by Congress to the United States Geological Survey, which is to prepare a topographic map or atlas of the entire country, and is now and has been since its establishment in 1879 engaged continuously on this work. So far it has surveyed about 1,050,000 square miles, exclusive of areas surveyed in Alaska, or more than one-third of the United States. The sheets or maps forming this atlas represent areas called quadrangles, whose boundaries are meridians of longitude and parallels of latitude.

About 1900 quadrangles have now been mapped, the maps showing the hypsographic features of the land, such as mountains, hills, valleys, and gulches; all bodies of water, such as lakes, marshes, streams, and springs; the routes of travel, such as railroads, wagon roads, and trails; political boundaries; cities, towns, and permanent buildings; and the names of natural and other features.

The Survey is preparing also a geological atlas of the United States, and as the topographic atlas will consist of many separate sheets, each showing the topography of a quandrangle, the geologic atlas will consist of many separate folios, or bound groups of sheets, each folio showing the geology of a quadrangle. Each folio will include several large pages of descriptive text, a topographic map, and one or more geologic maps, with columnar or cross sections and such other illustrations as may be required to show the geologic features of the region mapped. The topographic map of the quadrangle forms the base of the geologic map, and the scale and general features of both are the same.

The topographic maps are sold by the Survey at cost of publication, the price for those of standard size being 5 cents each, or $3 per hundred. The folios are sold at about the cost of paper, printing and binding. Most of them are priced at 25 cents each, but some folios that are unusually large are sold for 50 cents.

A new list of the topographic maps and folios and geologic folios thus far published has just been issued, and copies of this list may be obtained by applying to the Director, U. S. Geological Survey, Washington, D. C. The Survey also has for distribution a set of index circulars which show for different sections of the country the maps and folios completed, also the various stages of the work in areas for which maps and folios are in preparation. These circulars are revised at frequent intervals, and they contain, in addition to full information concerning the Survey maps, the names of agents in each region who have for sale the maps of areas in that region.

Change In Kalamazoo Firm.

Kalamazoo, Mich., Aug. 15.—The builders' supply firm of W. N. Mershon has been succeeded by the Mershon-Bartlett Company. The concern has two warehouses, an office and one yard. The managers are Floyd Johnson and C. M. Lewis, men both well known in the builder's supply business in the State of Michigan. They report that their business has been very good lately and the new firm is making many friends in this city.

"Cement Pipe and Tile" is the title of a neat little volume compiled and written by E. S. Hanson, editor of *Cement Era*, Chicago. It briefly and ably sets forth the advantages of cement for pipe and tile, giving the methods of manufacture, comparative tests, costs, etc. It constitutes a good manual to date of these two important branches of the concrete industry.

QUARRIES

The A. A. A. Good Roads Convention.

The American Automobile Association will hold its second annual good roads meeting at Cleveland, O., September 21, 22 and 23.

Among those who have accepted invitations to appear as speakers, as stated in the tentative program, are James C. Wonders, state highway commissioner of Ohio; Captain Richmond P. Hobson, M. C., from Alabama; James H. Macdonald, state highway commissioner of Connecticut; N. J. Bachelder, master, and George S. Ladd, lecturer, of the National Grange; S. Percy Hooker, chairman New York State Highway Commission; Edward J. Kent, of Pittsburg; Joseph H. Weeks, of Philadelphia; Samuel Hill, president Washington State Good Roads Association; L. W. Page, director United States Office of Public Roads; A. B. Fletcher, secretary of the Massachusetts Highway Commission; Prevost Hubbard, chemist of the United States Office of Public Roads, and others.

The program on the last day of the meeting includes an inspection of roads under the charge of the demonstration committee, through the courtesy of the automobile club of Cleveland.

Organize Company to Crush Rock.

LIMA, OHIO, Aug. 9.—C. L. Fess, A. D. Miller, J. H. Secrist, Lee Miller, W. Axline and L. H. Post are the incorporators of The Amanda Stone Company, capitalized at $10,000. They are building an entirely new plant which is located at Conant, Ohio, where the shipping facilities are plentiful and stone for quarrying is in abundance.

Purchase Rock Quarry.

COTTAGE GROVE, ORE., Aug. 16.—The city council has decided to buy the Cochran rock quarry, containing three acres of the best quality of rock for street and road improvement, and easy of access. A first-class rock crusher and large steam roller are to be installed.

Opening Up Big Quarry.

MARTINSBURG, W. VA., Aug. 16.—The preliminary work to the opening of the Jones & Laughlin (Pittsburg, Pa.) limestone quarries, near here, was begun recently when a force of fifty men commenced the construction of a switch from the main line of the Baltimore and Ohio Railroad into the big tract of land owned by this company. After the switch is completed a force of 400 men will be put to work developing the quarries. The limestone will be shipped to Pittsburg, Homestead, McKeesport and other points in large quantities, and will be used in the manufacture of steel.

Takes Over Stone Company.

COLUMBUS, OHIO, Aug. 17.—In addition to making the lease of 160 acres of quarry land recently noted the Casparis Stone Company has also leased the properties of the Franklin Stone Company, which was organized several years ago to furnish stone to the furnaces of the Columbus Iron and Steel Company and other iron and steel plants and will hereafter operate these quarries, crushing the rock at its own big plant near Arlington. The Woodward and Pausch Stone Company has taken over the quarries of the Carnegie Company and is now operating them. Other changes in the local stone trade are expected to take place in the near future.

New Plant Soon Ready.

MARQUETTE, MICH., Aug. 4.—Lipsett & Sinclair expect to be able to start their new rock crushing plant, located where Whetstone Creek crosses the old county road, southwest of the city, by the first of next month. The extension of the railroad spur to the plant has been finished, and the excavations for the concrete foundations for the machinery have been made. The crusher and motor that will be installed have been ordered for several weeks and are expected daily. Once they are received the work of preparing the plant for production will go forward rapidly.

A Symonds crusher, with a capacity of about 300 yards of stone daily, will be installed, and it will be driven by a 50-horsepower electric motor, which will be operated by power from the city plant.

A Congress of Road Builders.

A number of road builders met in the Washington Good Roads Building at the Alaska-Yukon-Pacific Exposition grounds, Seattle, Wash., on July 4, and continued in session for three days, discussing plans to form a permanent organization of national influence.

Samuel Hill acted as chairman and called the convention to order.

George E. Dickinson, chairman of the Washington State Commission, made a formal presentation of the Good Roads Building to the University of Washington. The building will be used by the university for its department of highway engineering, under the direction of Prof. S. C. Lancaster.

Hon. C. H. Hanford, of Seattle, made an address on "The Objects and Purposes of this Congress." He outlined the work that is before the country in the development of a comprehensive system of highways.

M. O. Eldridge, of the United States Office of Public Roads, Washington, D. C., read a paper on "Earth, Sand, Clay and Gravel Roads."

Professor Henry Landes, of the University of Washington, read a paper on "Characteristics of Stone Suited for Use as Macadam or for Paving Blocks," which was followed by a discussion concerning the presence of serviceable stone within the State of Washington.

A. W. Campbell, of Toronto, deputy minister of public works of the province of Ontario, Can., gave an address on "Successful Macadam Roadways, with Clay and Stone Binder."

R. H. Thompson, city engineer of Seattle, read a paper entitled "Why and How Cities Are Built." He prefaced his paper with some remarks in which he described his method of overcoming the objections of rural communities to what they would term "outside interference" in the extension of improved roads.

F. N. Godfrey, of New York, master of the New York state grange, read a paper on "The Farmer and the Road."

A. N. Johnson, state highway engineer of Illinois, made an address on "Some Features of Macadam Construction."

George W. Kummer, of Seattle, read a paper on and Manufacture."

Clifford Richardson, of New York, read a paper entitled "Asphalt-Macadam Roadways."

E. Purnell Hooley, of Nottingham, England, gave an address on the subject of "Tarmac Roads."

Harold Parker, chairman of the Massachusetts State Highway Commission, read a paper on "Fences, Hedgerows and Shade Trees."

A committee on permanent organization was appointed, as follows: E. L. Powers, of New York, chairman; R. H. Thompson, of Seattle, Wash.; F. N. Godfrey, of New York; A. W. Campbell, of Toronto, Ont.; Clifford Richardson, of New York; Samuel Hill, of Seattle, Wash.; J. C. Lawrence, Olympia, Wash.; A. N. Johnson, of Illinois; Harold Parker, of Massachusetts.

Officers were elected as follows: Samuel Hill, president; James H. MacDonald, vice-president, and E. L. Powers, secretary; and the permanent organization committee was elected a permanent executive committee, of which Samuel Hill should be chairman.

It was also moved that President Hill should appoint a subcommittee of three to formulate a plan of permanent organization, to name the organization and to draft a constitution and by-laws, to be submitted to the executive committee. This committee was nominated by the president as follows: E. L. Powers, of New York, chairman; A. W. Campbell, of Toronto, Ont., and J. N. Godfrey, of New York.

The arrangement of the time and place at which the next meeting should be held was left in the hands of the executive committee.

Rock Quarries Opened.

GOLDEN, COLO., Aug. 15.—Practical work has been commenced at the Doane-Westcott rock quarries and crushing plant, near Golden.

The rock is quarried from the cliffs of South Table Mountain, about 400 feet above Golden. The product is a basalt rock which is pronounced one of the finest paving materials to be found in the United States.

The enterprise is conducted by the Westcott-Doane Investment Company of Denver. Orders for something over 20,000 tons of crushed rock have already been received from the city of Denver.

Crushed Rock Company Formed.

The San Antonio Crushed Rock Company, San Antonio, Tex., has been incorporated by C. L. Finchman, Martin White, R. J. Boyle, and others. Capital stock, $20,000.

Ohio State Road Experiments.

According to program announced in ROCK PRODUCTS for March, in connection with the meeting of the Ohio State Stone Club, the practical experiments of different road materials and treatments of the same is now under construction. A Columbus reporter gives the following description:

"The Ohio State Highway Department, of which James C. Wonders is State Highway Commissioner, is now constructing an experimental road for the purpose of determining the comparative value of the different dust preventives now on the market. This work is located on Nelson Avenue near the city of Columbus, and is built in sections, using different materials in each section. Several of the treatments have already been applied. The work is being done in sections of 400 feet in length, with a roadway sixteen feet wide, and it is being built as one continuous road, so that all parts of it will receive the same amount of travel. It is expected to have a section treated by Carbo-Via; Standard Oil asphaltic treatment; Kentucky Rock Asphalt; Asphaltoilene; the Indian Refining Company's product; the Impervious Product Company, of Baltimore; the American Asphaltum and Rubber Company, of Chicago; the Barrett Manufacturing Company, Tarvia and Tarvia X; the Robeson Process Company, of New York; Taroid; United Gas & Improvement Company, of Philadelphia; and the Petrolitihic Pavement Company, of Los Angeles, Cal. It is also expected to construct two sections, using Portland cement for binder."

Since the advent of the automobile the matter of top dressing for roads has come up to an abrupt bump. While there is no question about the superiority of the macadam base, the dust-producing and metal-destroying proclivities of fine screenings for surface treatment has been relegated to the rear. The section of rubber tires pulls and loosens the fine material at such a rate that no amount of rolling can do it any good. The expense of heavy rollers to repair roads badly cut up in this way is more than enough to pay for oil or tar treatment of the surface. The rock crusher operators should observe the results of such tests as that cited, for new road specifications are very apt to contain some radical changes. Road metal will cost the contractor more money under the coming regime, and "the same old thing" may cause a loss.

The Exhibit of the U. S. Office of Public Roads at the A. Y. P. Exposition.

The exhibit of the United States Office of Public Roads is intended to instruct and interest the farmer, the road official and the general public in road building. It was prepared and intsalled under the direction of O. M. Eldredge, special agent in charge.

The exhibit consists of a number of models built on a scale of 1½ inches to the foot and illustrating fifteen standard types of roads in use in various parts of the United States. One of the most important features of the exhibit is that which shows the use of asphaltic oil and tar as dust palliatives and preventives, and for the preservation of macadam roads subject to fast automobile traffic.

A miniature crushing plant and steam roller in actual operation, as well as a complete outfit of earth handling machinery, is also shown. A model of Rock Creek Park, Washington, D. C., illustrates the relation of roads and bridges to streams and rugged topography.

Crushed Rock For Jetties.

PORTLAND, ORE., Aug. 17.—Gerald Bagnall, assistant United States engineer, in charge of the work at the mouth of the Columbia River, reports that 32,000 tons of rock daily are being delivered, and that the jetty work is progressing rapidly.

Assistant Engineer Polhemus, in charge of the work at Calilo, reports that on account of the June flood a large amount of dredging will be necessary before work can be resumed to any extent.

New Crushed Rock and Gravel Plant.

BOISE, IDAHO, Aug. 19.—The Idaho Crushed Rock & Gravel Company recently installed a large plant near the Ninth Street bridge,ht is city. The men at the head of the concern are Elias Marsters, E. W. Yeomans and Andrew Johnson. All the machinery has been set up and is in operation. The equipment consists of a combination screen, crusher and dredge. The dredge is operated by a 60-horsepower steam engine, the crusher by a 15-horsepower motor and a 5-horsepower motor runs the screen.

Gravel and stone is taken from the bed of the river by the dredge and run through the screen which separates the sand from the gravel and screens the latter into different sizes.

FOR THE RETAILER

The National Builders' Supply Association

Meets Annually.

OFFICERS.

Frank S. Wright, Chicago.....President
Harry W. Classen, Baltimore.....Treasurer
James W. Wardrop, Pittsburg.....Secretary

STATE VICE-PRESIDENTS.

Arkansas.....Charles E. Taylor, Little Rock
California.....C. J. Waterhouse, San Francisco
Delaware.....Charles Bye, Wilmington
District of Columbia.....S. D. Lincoln, Washington
Georgia.....P. G. Hanahan, Atlanta
Indiana.....H. B. Lyman, Lafayette
Illinois.....H. H. Halliday, Cairo
Iowa.....R. Hay, Dubuque
Kentucky.....Owen Tyler, Louisville
Louisiana.....John J. Voekel, New Orleans
Maryland.....J. J. Kelly, Baltimore
Massachusetts.....B. F. Marsh, Worcester
Michigan.....S. J. Vail, Detroit
Missouri.....Howard McCutcheon, Kansas City
Minnesota.....F. J. Nixon, Duluth
New Jersey.....Ambrose Tomkins, Newark
New York.....M. A. Reeb, Buffalo
Ohio.....E. S. Walton, Youngstown
Pennsylvania.....Cyrus Borginer, Philadelphia
Rhode Island.....C. M. Kelly, Providence
South Carolina.....A. G. Gower, Greenville
Tennessee.....W. W. Fischer, Memphis
West Virginia.....R. W. Marshall, Wheeling
Wisconsin.....R. C. Brown, Oshkosh
Washington.....S. W. R. Dailey, Seattle

EXECUTIVE COMMITTEE.

James G. Lincoln, Boston; Walter F. Jahnke, New Orleans; A. E. Bradshaw, Indianapolis; Gordon Willis, St. Louis; V. H. Kriegshaber, Atlanta.

Official Organ, ROCK PRODUCTS

Here Is a Definite Campaign For You.

In the July number of ROCK PRODUCTS we published a cartoon to set forth the actual status of an interesting condition to the building material interests of the country. It shows that the farmer now has his ear to the ground on the subject of permanent concrete improvements for his establishment. Incidentally it happens that at this very moment the farmers of this country taken as a class now have or will very soon have divided amongst them billions of dollars in cash to pay for the crops that they have raised, garnered and shipped to market. In fact it is the farmer who will have practically all of the easy money for investment during the next five or six months. This is a tip to the man who handles building materials in the county seat cities and in the small towns having a tributary farming community, and further, Mr. Dealer, it is up to you to wake up and have a little enterprise to go after your farmer acquaintances. Show them the article which is published on another page of this journal relating to the construction of concrete silos, and if this suggestion is not exactly the thing that meets his requirements, just notify your trade organ, and ROCK PRODUCTS will get the information for you and see that you have it to transmit to your farmer customer. There is every probability that if all the thousands of material men who read ROCK PRODUCTS regularly could be induced to undertake a definite campaign of this kind that it would increase each man's business practically in proportion to the effort he spends in such a direction.

We have given you this text, because every up-to-date farmer should have a silo, and there are very few of them in comparison to what there should be. This gives you the first talking point, and his suggestions will come back to you if it happens to be that he does not need a silo. You not only could sell the cement, but the reinforcing material and in many cases at least a part of the aggregates used in such a job.

This suggestion amounts to a direct campaign to the farming public which you are invited to participate in, and doubtless there are many dealers who thereby will be able to cut off a bigger slice of the heavy wave of prosperity that is now flooding the country.

What Is a Distributor In Portland Cement?

BY JAMES G. LINCOLN.

Why call one concern a distributor and another a dealer? is often asked by manufacturers comparatively new in the cement business.

A distributor is a dealer with or without a retail yard or yards, who sells consumers, contractors and also dealers, often through a large territory. This condition has arisen from the old days of importing Portland cement. At that time only a few brands of foreign cements were considered salable; few foreign manufacturers sent salesmen to this market; few importers were known abroad and had connections with foreign mills. The importer had a certain quantity of cement, arriving by certain steamers, often arranged for months in advance.

These conditions required an importer to study the quality and character of the brand he had bought and hustle to dispose of each arrival to save storage expenses. The dealers' trade was his only sure market, and he soon learned to respect the small country dealer who was venturesome enough to place his order for 25 bbls. "ex ship." His retail yard trade was needed to take care of the cement ordered out in hopes of quick shipment, and failing that was put into store. With the gradual growth of the Portland cement business, the importer found himself with often several hundred dealers on his books, and in the same relation to them as today the manufacturer sustains to the dealer. He found it to his advantage to supply the consumer through the dealer; to help him make the goods known; to try to keep the dealer interested in the business, and try to make it profitable to him.

These intimate business relations between dealer and importer had continued some twenty or twenty-five years before American Portland cement appeared on the scene. The dealers, large and small, all consulted their old friend the importer whenever a new brand of cement came to their attention. Is this American cement safe? was often asked the importer, and for many years "No" was the correct reply. When, however, the American mill produced a better article than the imported, the importer became a distributor and his following, taking his advice, bought American brands.

Today the distributor goes to his manufacturer with his own trade and that of the dealers in his section, who buy from one car to several hundred cars a year. The dealer has the confidence that only comes from many years of fair dealings, honest goods, and careful attention. He has found that his interests are better served through the distributor than by buying direct of the manufacturer; that the distributor pays more attention to his wants than a large corporation at a distance. On the other hand, the manufacturer reduces his number of accounts; receives prompt pay in place of long-winded accounts and bad bills; saves salesmen's expenses; has a salesman on the spot all the time who must work in order to live. For this the manufacturer spends much less than by any other system of marketing his goods.

Ask any cement manufacturer what he would pay if he could reduce several hundred accounts into one, and be assured of daily cash returns at ten days from each shipment, and the value of the distributor is made clear.

The wide-awake sales manager who selects the proper distributor in a territory and assist him to increase sales in that territory will show better results than the man who endeavors to see how many customers he can sell direct.

SPEEDOMETERS OF THE OHIO RETAILERS' CONVENTION.

GRAND OUTING.

Ohio Supply Dealers Have A Fine Meeting Beside Lake Erie.

CEDAR POINT, OHIO, Aug. 15.—Great was the gathering of the clans; they came and they kept coming, and then some, till the attendance to the summer meeting of the Ohio Builders' Supply Association, held at "The Breakers" August 13 and 14, rose in point of numbers more than fifty per cent over the attendance of last year and the greatest in number by far of any attendance to meetings held during the three years' existence of the association.

Friday, the 13th of August, and the first day of the summer meeting of the association, was a busy day. Its forenoon was devoted to the registration and reception of members. And yet with all the possible diligence exercised by the reception committee, some forty members failed to register.

The reception committee, composed of W. O. Holst, F. Lawson Moores and Stanley Rhoades, had scheduled on the association programme for the afternoon "Athletic Outburst — Great — Watch for next announcement of events." A ball game was being scheduled and a unanimous desire expressed that George Gengnagel umpire the game. "Nay, gentlemen," said he; "your umpire I cannot be again; you had a good excuse last year to throw me into the lake, but you had not the nerve. You have felt sorry ever since and are aching for an excuse now to commit murder. Life may be just one thing after another, but this dam-ned thing"—he was careful to divide the word into two syllables to avoid profanity —"shall not happen with my consent." What lent color of truth to George's assertion was that the ball game was abandoned when he refused to umpire it, and the "Athletic Outburst" came to naught. It was noticed that F. Lawson Moores' form, towering above the heads of every one, J. P. Carlisle, R. E. DoVille, Fred J. Crisp and Bert Graham, the most courteous and able of secretaries, all old-timers and great enthusiasts on association matters, felt keen disappointment that Gengnagel refused to take chances.

In the evening the reception committee had arranged for the entertainment of the members and their wives and those attending the meeting by reserving seats in the opera house near "The Breakers." The performance was thoroughly enjoyed by all and the ladies, going back to the hotel after a full day's enjoyment and pleasure, voiced the sentiment that the reception committee knew how to do things right.

But still another pleasant surprise was in store for them when they reached the hotel. An exhibition of championship checkers was in progress by Newell W. Banks, who played against six men simultaneously, blindfolded, and putting one after the other to the bad. It is said he plays against twenty-five men simultaneously, blindfolded, as easily as against six.

Thus ended the first day of the annual "Joyfest" of the O. B. S. A., which will be remembered by those who participated in it as one of the most pleasant days of their lives.

As this summer meeting was held more for recreation and pleasure, and forming closer ties of friendly feeling among dealers all over the State of Ohio, there was only one business meeting held Saturday morning in Convention Hall, near "The Breakers."

THE BUSINESS MEETING.

President Frank Hunter called the meeting to order at sharp 10:30, with Bert J. Graham at the secretary's desk.

President Frank Hunter's theme in his opening address to the members of the Ohio Builders' Supply Association was "Caution." After welcoming the members to the meeting and expressing his gratification at seeing such a large attendance, fully fifty per cent greater than last year, and the greatest in the existence of the association, he entered upon his theme. Handling the subject forcefully and in detail, he urged upon the members of the association to exercise the greatest caution, not to act too hastily on hearsay information.

One of the strong points he made was when he said, "Do not bring complaints against any manufacturers in our meeting, who, upon information you have received and which you believe to be true, has violated the rules of the association, selling direct to the consumer. Give this information to the secretary and let him investigate. Let him write to the manufacturer first and learn what he has to say about it. If on the secretary's investigation it is found that he is guilty of having violated our rules and agreement, it is time enough to bring it to the notice of the association in its meetings and its members can

then be notified of the action of the offending manufacturer.

"On the other hand, if you bring complaint in our meetings against a manufacturer upon hearsay information which should prove to be groundless, you do that manufacturer a great wrong and I believe in being fair to both enemy and friend. Give the accused a fair show and a fair deal and do not condemn him till he is found guilty. We are all prone to act too hastily. We are all prone to believe hearsay information which seems authentic and often, very often, we regret having believed and regret having acted too impulsively. I therefore urge upon you to exercise great caution, till things you honestly believe you positively know do exist."

He then reviewed the lien laws in the State of Ohio from 1894 to the present time, in that clear, terse manner characteristic of him, and said, among other matters he dwelt on: "The lien law put upon the statute books in Ohio in 1904 is as good as we can get, with one exception. This exception lies in the serving of a lien notice upon the owner, the contractor and subcontractor personally.

"This has often caused the builders' supply dealers annoyance, trouble and great expense, as it has frequently been found that the owner is a non-resident or away from home, that the contractor and subcontractor are out of town on another job, and often it has been found not only difficult but impossible to serve these notices personally.

"The amendment to this law, which is now being agitated by us, and the bill drawn for it is now in the hands of one of our ablest state legislators, who will present it in the coming session of the State Legislature, provides that a lien notice on the owner, contractor or subcontractor sent by registered letter to the reputed residence or place where they are known to receive their mail, shall constitute legal service.

"The change asked for in this amendment does not change the character, in any particular, of the lien law passed in 1904, does no harm to anybody, and will save the dealers handling building material of any and all kinds of annoyance, trouble and loss."

The minutes of the last meeting were read by Secretary Graham and adopted, also the reports of Treasurer R. E. DoVille and Secretary Bert J. Graham.

Letter of resignation from executive committee, on account of ill health, was read from Mr. R. Kind. It was moved and seconded that Mr. Kind be tendered vote of thanks for his zealous work and that his resignation be accepted with regrets.

Under new business, the association took up matters handled by it during the past six months.

Correspondence was read pertaining to several cases between manufacturers and the association.

The secretary was authorized to correspond with secretaries of lumber and hardwood associations, to enlist their assistance in securing passage of proposed amendment to lien law.

The committee on Valentine Law advised that nothing be done toward repeal.

The committee on Lien Law reported that amendment bill had been prepared and is now in hands of state legislator and urged assistance from everyone.

It was moved, seconded and carried that the executive committee arrange date for annual meeting at same place and immediately following lumbermen's convention.

President Hunter appointed Messrs. Jas. Degnan and Harry Blum on Lien Law committee.

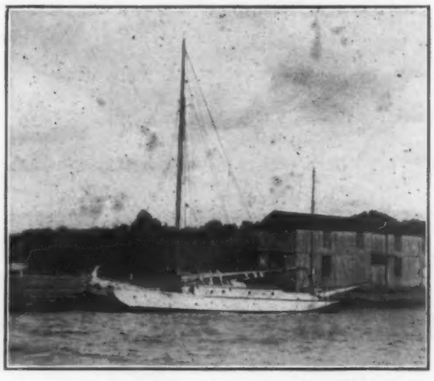
The meeting then adjourned.

THE ATTENDANCE.

Frank Hunter, Columbus Builders' Supply Company, Columbus, O.
Bert J. Graham, W. A. Fay, Cleveland Builders' Supply Company, Cleveland, O.
George A. Gengnagel, Schafer & Gengnagel, Dayton, O.
D. S. Rhoades, American Sewer Pipe Company, Columbus, O.
J. L. Price, J. L. Price Company, Marion, O.
Theodore H. Elwell, Castalia, O.
B. F. Andrews, Cleveland, O.
C. H. Brigham, C. R. Brigham, Atlas Portland Cement Company, New York City.
H. D. Moosehead, Zanesville, O.
E. C. Van Epps, F. L. Jandernal, Lehigh Portland Cement Company, Cleveland, O.
Roger Titus, F. J. Griswold, A. R. Black, W. H. Kerman, W. B. Knight, American Gypsum Company, Port Clinton, O.
C. A. Erwin, H. W. Blockson, United States Gypsum Company, Columbus, O.
W. E. Shearer, United States Gypsum Company, Cleveland, O.
O. H. Himmelbright, United States Gypsum Company, Piqua, O.
W. Fishack, L. E. Fishack, Fishack Plaster Company, Toledo, O.
Frank Culver, Ohio & Binns Retarder Company, Port Clinton, O.
John C. Denison, National Mortar & Supply Company, Pittsburg, Pa.
M. L. Wells, architect, Wheeling, W. Va.
E. A. Wilson, Bostwick Metal Lath Company, Niles, O.
William Wallace, Cleveland, O.
W. W. Hoffamn, Loraine, O.
J. P. Carlisle, Columbus, O.
D. K. Thompson, Jr., Columbus, O.

A BOUQUET OF THE OHIO RETAILERS' MEETING.

J. Q. Adams, Coshocton Lumber Company, Coshocton, O.
Edward W. Way, Toledo, O.
Charles V. Reel, Edison Portland Cement Company, Pittsburg, Pa.
T. L. Hughes, Universal Portland Cement Company, Pittsburg, Pa.
C. A. Owens, John D. Owens Lumber Company, Owens, Ohio.
E. M. Koch, Universal Portland Cement Company, Pittsburg, Pa.
E. A. Gale, F. C. Powers, Castalia Portland Cement Company, Castalia, O.
J. V. Ruckpatrick, Castalia Portland Cement Company, Castalia, O.
J. J. Urschal, Urschal-Bates Valve Bag Company, Toledo, O.
Morris M. Hunter, Edison Portland Cement Company, Pittsburg, Pa.
J. E. Cooper, Akron, O.
O. C. Maurer, Toledo, O.
M. W. Battenfield, Clark & Battenfield, Delaware, O.
William H. Smith, The T. Smith & Son Lumber Company, Newark, O.
Charles Schmutz, Superior Portland Cement Company, Cincinnati, O.
A. J. Koos, The Newark Lumber Company, Newark, O.
M. A. Maher, Greenville, O.
Frank C. Lulter, Lexington, O.
Harry L. West, Toledo Builders' Supply Company, Toledo, O.
W. O. Holst, W. O. Holst Supply Company, Toledo, O.
R. E. DoVilee, Ohio Builders' Supply Company, Toledo, O.
E. G. Pettit, Crooksville, O.
F. Lawson Moores, Moores-Coney Company, Cincinnati, O.
N. E. St. Clair, Sandusky, O.
Henry Blum, People's Builders Supply Company, Toledo, O.
Elmer E. Stillwell, Bellefontaine, O.
George H. Junod, Athens Lumber Company, Athens, O.
W. D. Rayburn, Pittsburg, Pa.
G. W. Munter, Lima, O.
John A. Mooney, Pal, O.
Fred J. Crisp, Akron, O.
A. H. Gallagher, Maumee Chemical Company, Toledo, O.
Charles O'Donnell, Buckeye Portland Cement Company, Bellefontaine, O.
Howard B. Arnold, Dayton Builders' Supply Company, Dayton, O.
C. S. Bigsby, Garry Iron & Steel Company, Cleveland, O.
W. F. Stull, Fremont, O.
R. G. Stull, Fremont, O.
J. C. Stull, Fremont, O.
E. H. Fishack, Consumers' Gypsum Company, Port Clinton, O.
Frederick Baird, Cleveland, O.
S. G. Webb, Columbus, O.
W. O. Kinrich, Toledo, O.
R. W. Marshall, Wheeling Wall Plaster Company, Wheeling, W. Va.
F. W. Olemacher, Sandusky, O.
E. H. Defebaugh, F. R. Van Ham, ROCK PRODUCTS, Chicago, Ill.



CULVER AND GALLAGHER'S YACHT CZARINA.

THE LADIES.

Mrs. W. A. Fay, Cleveland, O.
Mrs. G. A. Gangnagel, Dayton, O.
Mrs. Bert J. Graham, Cleveland, O.
Mrs. E. A. Gale, Toledo, O.
Mrs. M. M. Hunter, Pittsburg, Pa.
Mrs. Elmer E. Stillwell, Bellefontaine, O.
Mrs. G. W. Minter, Lima, O.
Mrs. George H. Junod, Athens, O.
Mrs. R. E. DoVille, Toledo, O.
Mrs. J. L. Price, Marion, O.
Mrs. C. A. Owens, Marion, O.
Miss Anna B. Coppel, Chillicothe, O.
Mrs. Frank Griswold, Port Clinton, O.
Mrs. A. R. Black, Port Clinton, O.

The scheduled programme for Saturday evening was "Suit Yourself—But Be Careful." Some of the members left in the evening, desiring to spend Sunday at home, but the greater part of them remained over, enjoying themselves thoroughly and heeding, like all well regulated members, the caution in the spirit it was given.

All the members enjoyed themselves thoroughly, but none of the members enjoyed the pleasant outing more, nor looked better or felt better or was more active and jovial than President Hunter. He enjoyed life thoroughly. Regularly every morning a little after 5 he could be seen taking his "dip" in the lake, and all day long chatting with members and friends at the hotel.

A Visit to Port Clinton, Ohio.

Port Clinton, Ohio, is the well-known center of the gypsum deposits in that section, and has been a history-maker as far as the manufacture of gypsum products is concerned, but that is not all this seaboard town is renowned for. It has a beautiful harbor and is the home of muskrats, the finest food to be had; has more good fellows to the square inch than any burg one could visit in many a day. It

CREW OF THE CZARINA READY FOR ACTION.

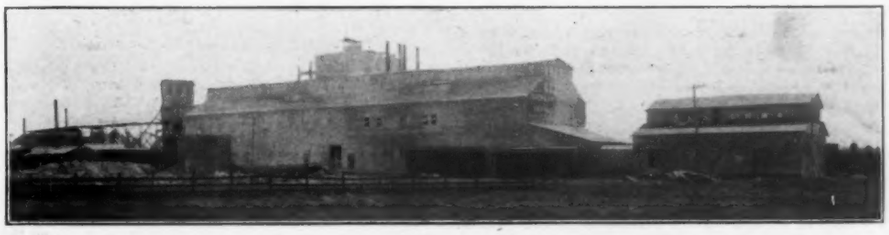
has many good homes and sociable business men who make the old town feel like home to any chap who happens to meander in there.

Two strangers were there the other day. One was Whaley, of the Cleveland-Akron Bag Company, and the other the writer; and we can both testify that the sun shines brightly and squalls are plentiful, but there are plenty of life-preservers and helping hands to make life pleasant for you. This is the home of the Czarina, the greatest little sailboat on the lakes, as well as the home of Senior Commodore Culver.

Three years ago the American Gypsum Company built a plant at Port Clinton, Ohio, on the main line of the Lake Shore and Michigan Southern Railroad, centrally located on a large tract of land owned by the company and underlaid with a splendid vein of gypsum. Its operation has been continuous, and since Frank Griswold, general manager, built this plant, it has been enlarged and increased until 500 tons of gypsum have been calcined in twenty-four hours and 450 tons have been shipped in a day.

This organization as constituted today is: J. H. McCrady, president; D. J. Kennedy, vice-president; J. M. Homer, secretary; J. B. Davis, treasurer; F. J. Griswold, general manager; all experienced operators in plaster and building materials in the Central States.

While in attendance at the Ohio Builders' Supply Association meeting the other day, the writer took occasion to take a trip on the Czarina, which landed me at Port Clinton, where I spent the day between



MAMMOTH PLANT OF THE AMERICAN GYPSUM COMPANY, PORT CLINTON, OHIO.

the plants of the American Gypsum Company and Ohio-Binns Retarder Company. The first plant was visited under the guardianship of Frank Culver, who is interested in both institutions; A. A. Gallagher, of Toledo, and Manager Frank Griswold, Sales Agent Arthur Black and Assistant Sales Agent William Knight.

After doing the big plaster plant on the port side, it was my pleasure to note that electricity was the principal power and that independent motors gave uniform acceleration to the splendid equipment of this plant. The kettles were all of improved type and the other mechanical equipment made it possible to make the highest quality of plaster and treat the gypsum which comes from the ice cream parlor mine on elevators handled by an electric haul-up, which elevates the cars so that the raw material, when starting through the plant, has a downward course.

The double track railroad of same operation is operated in this underground mine, which is forty feet down, and mule power is used. Raw material of high quality is in good supply, for this company have a large tract of land which has a five-foot ledge of plaster rock that shows quality in its raw state.

The power plant is one of the best in the country and a twenty-hour run is just as easy as a ten-hour run.

When this plant was built, it was the intention of the builders to make it as modern as possible, and the equipment is up-to-date. The striking feature, as it appeared to the writer, was the fact that this building is constructed of concrete, making it fireproof, and built so heavily that the ponderous machinery does not even make an impression on the foundations. The mechanical equipment largely comes from the Des Moines Manufacturing and Supply Company, and the quantity turned out indicates that the company as well as General Manager Griswold have given their best thought to the putting up of this plant. The dimensions of this plant, as seen in the pictures, indicate that while it is not the largest, it is well arranged for economically handling material as well as storage of product for shipment, and when the baggers get working, it is very easy to load the material right on the handily located switch track.

The mechanical equipment is kept up by a good machine shop, which contains the latest tools. The quality of material under the brand "Anchor" is of the best, as well as the cement plaster, wood fiber plaster, calcined plaster and stucco.

Of the dealers who were in attendance at the Ohio builders' material meeting, among them being Mike Dolan and Mrs. Dolan, of Greenville, Ohio, my friend Mike was equipped for the journey through the mines. He and Mrs. D. looked as if they were going under Niagara Falls, but they enjoyed the outing as all the rest of us did. We were entertained at a good country dinner at the hospitable boarding-house of this company.

Over at the plant of the Ohio-Binns Retarder Company I was escorted through the operations, where the majority of the retarders used in the United States is made, by Manager Culver, Sales Agent Gallagher and Superintendent Kelly. This is a fireproof plant, built of concrete with cement floor, and equipped to make retarder that retards. The "O. & B." brands have been most successful, and this is best illustrated by the fact that the plant is running full. Order after order comes blowing in and in fact in the past month there is even an enlarged demand.

This company have anything from a bolt mill to make wood fiber to an emergency plant to make the stuff if the regular plant should happen to be out of commission.

AL GALLAGHER AT THE HELM.

These two operations, with the big mill of the United States Gypsum Company, make Port Clinton a typical plaster town, and while the Ohio & Binns Company are located right in the city, the American Gypsum Company's plant is two miles out of town, where they have their own town with houses for their men and a boarding-house. In fact, the Waldorf-Astoria of the American Gypsum plant is a modern equipped building with shower baths and the latest improvements.

Our official photographer on the job also did some good work. He made a picture of the Czarina, the greatest sail craft on the lakes, with an auxiliary equipment, which is officered by Commodores Culver and Gallagher; the crew was composed of Doc. Yingling, Capt. Kelly, Charlie O'Donnell, of Buckeye Portland Cement Company, and the writer, who is an expert on peeling tomatoes and working in the cook's galley. Secretary Davis, of the American Gypsum Company, was in command recently, and our snapshot man caught the Czarina with him at the wheel.

While she was in port he snapped President McCrady, of the American Gypsum Company, Gallagher, Yingling and a number of the boys of the local crew. The Czarina at rest at the dock in Port Clinton shows her beautiful lines, comfortable cabin, length of sail, and ability to go anywhere at any time and get back.

Large Distributors of Supplies.

JACKSON, MICH., Aug. 10.—The Bartlett Company, well-known leaders in builders' supplies, are erecting at this place a new warehouse which will be one of the most improved and complete warehouses for the economical handling of supplies in the country. The property, which has been purchased, is located on the Michigan Central and the Lake Shore and Michigan Southern Railways, and will have switching tracks from each of these lines into the yard. It is conveniently situated near the terminal station of the Interurban system so that shipments may be made by this means as well as by railroad.

The property is 144 by 217 feet and it will have a two-story building constructed of reinforced concrete. The curtain walls will be of vitrified paving brick and Jackson pressed brick.

J. E. Bartlett, when interviewed by a representative of ROCK PRODUCTS, said that business with them in all lines has been excellent. They are the sole distributors of Egyptian cement and handle the output of the Jackson Pressed Brick Company as well as a number of other dealers in builders' supplies. One of their lines is the Art white cement, of which they are distributors. They also have a sand plant which produces a high grade of white glass sand. The combination of these two materials makes a very fine white concrete and they have had an especially large run on these materials, as they distribute them in small quantities. Their force of traveling men cover the entire state of Michigan very thoroughly and the surrounding territory as well.

The officers of this company are: J. E. Bartlett, president; E. J. Fogell, vice-president; H. E. Morehouse, secretary; C. B. Elwood, treasurer.

INTERIOR VIEW OF AMERICAN GYPSUM COMPANY PLANT.

INDIANA.

Building Supply Retailers in Many Cities Express Confidence in Return of Prosperous Conditions.

In this issue our traveling representative has covered some of the live, wide awake, hustling towns of Indiana, visiting the building supply dealers and getting the pulse of business conditions. Everywhere he finds the dealers busy, with bright prospects ahead. Not one of them has uttered a complaint. All are optimistic and all see in the great tidal wave of prosperity which is sweeping on, plenty of room for them as well as their competitor.

In Lafayette and Frankfort building operations have been fairly good and the dealers in these cities state that their trade has been better than last year and are very cheerful concerning the future.

In Martinsville and Greencastle the dealers in building material are satisfied with the year's business so far and look to a bright future, as the crops in this part of the state look good, especially corn and oats. Wheat does not come up to grade, on account of heavy rainfalls.

Lebanon, with a population of only 7,000 inhabitants, has three large building material dealers, who do an extensive trade with the farmers surrounding the town in a radius of perhaps thirty miles, the demand being principally for cement. The dealers in this town are satisfied with their business so far this year and look upon the future as full of promise.

In Crawfordsville nearly the same conditions exist, but the dealers are not quite so cheerful, though no complaints are heard. They have done a large business in the country surrounding Crawfordsville.

On account of local conditions, Valparaiso had an exceedingly good year in 1908. Those local conditions do not exist this year, so comparison with last year's business makes dealers there rather dissatisfied; but they are cheerful concerning the future. They realize that the farmer is becoming a better customer every year, using cement in his improvements on the farm, which a few years ago would have been deemed impossible.

There is little building going on in Logansport this year, but the dealers in building material there are commencing to look upon the farming districts as saving them from making a poor showing when conditions are slack in the city. The business of the dealers in builders' supplies this year has been rather slow, but they consider the outlook for the future good.

The condition of the trade in these various cities and towns has been summarized from the statements and opinions of men who are bright, energetic, yet conservative, and who are handling vast quantities of building material in the yards whose history is here given.

LAFAYETTE.

Frey Brothers and Company.

The plant, yard and office of Frey Brothers and Company, incorporated with J. C. Frey, president; William F. Frey, vice-president and treasurer, and A. P. Sheehan, secretary, is located at Thirty-second and Brice Streets. The plant was destroyed by fire last fall and has been rebuilt on a more modern plan. The yard is on both sides of Thirty-second Street.

A switch track from the Belt Railway runs through the yard with a team track on one side close to the cement and lime warehouses. Two driveways run parallel with the switch track on the east side of Thirty-second Street, and two driveways run north and south through the western part of the yard. By this method material in all parts of the yard is accessible to wagons to be loaded with the minimum of labor in handling it. Five teams are required to haul material to jobs in the city and vicinity.

The cement warehouse has a storage capacity of 2,000 barrels of plaster and cement and the lime house holds 2,000 barrels of lime. The company handles Lehigh Portland cement and the Speed & Co., Louisville, hydrate of lime, plaster from J. E. Bartlett & Co., Jackson, Mich. Sewer pipe flue lining fire clay, firebrick and wall coping from Louis McNutt, Indiana, cement blocks used mostly for foundations above grade line, common brick gravel and bank sand, which the company gets from five gravel pits they own in Lafayette.

The Frey Brothers have been in business fifteen years and were born and raised in Lafayette. Mr. Sheehan, the secretary, said that William F. Frey was the largest concrete, cement and sewer contractor in the state, also contracting railroad work. He laid 200,000 square feet of cement sidewalks in Lafayette, and this did not include any improved street or foundation work. He also put in a $25,000 sewer last year. They will use in one year thirty cars of cement and ten cars of lime and plaster.

Sense Brothers Company.

Sense Brothers Company, contractors and builders, have their office and factory located at 245 Main Street, Levee. They are manufacturers of cement building stone and handle lime, plaster and cement. Their warehouse has a storage capacity of 500 barrels of cement, plaster and lime. They sell the Universal, Lehigh and Speed, Louisville cement, plaster from the United States Gypsum Company and Grand Rapids, Mich., hydrated lime in sacks from Huntington, Ind. This material is hauled by team to the job in all parts of the city and vicinity. This concern has been doing a good business for fifteen years.

H. B. Lyman.

H. B. Lyman, dealer in lime, cement, building material and coal, with office and yard 110-112 North Second Street, another yard located on the Monon Railway, with switch track running alongside the yard and a third yard on First Street, half a block from the Big Four and Lake Erie Railroads, has ample storage room and the best of facilities for shipping and handling the large quantities of building material and coal he distributes in Lafayette and surrounding county.

In all of his yards driveways and team tracks are so arranged as to minimize the labor of handling material in loading and unloading wagons and cars. A very large percentage of material in the yards is delivered by team to its final destination, the average haul being about two miles. Some of this material and coal is shipped by rail to towns in the vicinity of Lafayette.

The warehouse holds 2,000 barrels of cement, plaster and lime. Lehigh and Atlas Portland cements are the principal brands sold. Lime in bulk is received from the Delphi Lime Company and stored in a lime house built on a refrigerator plan, which holds two carloads. Huntington and Woodville, both the hydrated lime and in the barrel, are sold in good large quantities and also hard wall plaster of Grand Rapids, Mich. Sewer pipe, flue lining, fire brick and fire clay, from Louis McNutt, is handled. This last material is stored in the open of the yards.

E. B. Layman, fifty years ago, established this business, and H. B. Layman, his son, has been at its head for the past fifteen years, increasing it to its present large proportions.

The Lafayette Fuel and Builders' Supply Co.

The Lafayette Fuel and Builders' Supply Company with office and yard corner First and Columbia Streets, does a large business in builders' supplies and has excellent facilities for shipping and hauling the same.

The warehouse has a storage capacity of 750 barrels of cement and plaster and lime. It carries Wabash Portland cement lime in bulk from the Delphi Lime Company, hydrated lime from Huntington, Ind., plaster from the American Gypsum Company, and Grand Rapids, Mich. Sewer pipe, flue lining, fire clay and fire brick from Louis McNutt, Brazil, Ind. All this material is delivered by team to jobs in the city and often beyond the corporate limits.

C. H. Peirce, secretary and treasurer of the company, said that this business had been established by William Taylor and Son forty years ago, Brockenbough and Son succeeding twelve years ago and John L. Van Natta & Co., three years ago; and now the present company are successors to the last firm, with William M. Jackson, president, John L. Van Natta, vice president, and C. H. Peirce, secretary and treasurer. Its principal business is coal.

R. C. Stader.

R. C. Stader is a dealer in coal, wood and cement, with office and yard at 331 North Third Street. His warehouse has a storage capacity of 300 barrels of cement, and he handles the Atlas brand. Two teams are kept busy delivering cement to all parts of the city and vicinity. He has been in business for twelve years.

B. K. Kramer.

B. K. Kramer is the inventor and manufacturer of concrete blocks and concrete ornamental porch material used for building purposes. He has built several residences with his concrete blocks in Lafayette, where they are well regarded. His factory and yard are at 225 Main Street Levee.

FRANKFORT.

The William G. Morris and Brother Company.

The William G. Morris and Brother Company, with Willard H. Morris, president, and Henry T. Morris, secretary, successors to William G. Morris and Brother, was established in 1878, and are pioneers in the coal and cement trade. They were the first dealers to handle domestic Portland cement in the Ninth Congressional District of Indiana in the early '80s. Mr. Morris said that the demand for cement is rapidly increasing every year, and large as it is at present, in a few years it will appear small as the use of cement today, in his opinion, is only in its infancy.

This concern handles the cement of the United States Portland Cement Company, of Bedford, Ind. Its warehouse has a storage capacity of 2,000 barrels of cement. The office and yard are located at the end of west Washington Street and the tracks of the Clover Leaf Railway. A switch track runs into the yard close to the warehouse, obviating double handling in unloading cars and placing cement in store. The territory this company supplies with cement is Frankfort and surrounding country. Much of its cement sold is delivered by team to the jobs within the corporate limits of the city.

The Kramer Brothers Company.

The Kramer Brothers Company, dealers in lumber and builders' material, were established in Frankfort in 1870 and commenced handling builders' supplies eighteen years ago. Their plant occupies one-half a block on both sides of the west end of Washington Street. A private switch track from the Pennsylvania Railway runs along the side of the entire length of its yard, passing close to its warehouses used for storing cement, plaster and lime. A driveway runs through the yard on which wagons are loaded handily with material to be delivered to jobs within the corporate limits of the city. The arrangements and methods in this yard are such that it obviates double handling and invariably insures prompt delivery of supplies.

The storage capacity of its warehouse runs up into several thousand barrels of cement and plaster. The lime house which was specially built for storing bulk lime easily holds a carload of this material. This company sells Medusa and Atlas Portland cements, plaster and stucco from the Grand Rapids Plaster Company, and lime from the Delphi Lime Company and from the Woodville White Lime Company. The demand for these materials is large and increasing every day in Frankfort and surrounding territory and the Kramer Brothers Company has become an important factor meeting this demand.

The Deming and Thompson Lumber Company.

The Deming and Thompson Lumber Company, dealers in lumber and building materials, with office and yard at 300 west Washington Street, was established twenty-three years ago, and seven years ago commenced handling lime, cement and plaster.

A switch track from the Lake Erie and Western Railway runs alongside the entire length of its yard and close to its warehouse. A driveway in the yard passes close to the warehouse and runs parallel with the car track. This arrangement produces the best results for handling material economically and quickly and delivering same promptly to jobs in the city and vicinity and by rail to neighboring towns within a radius of thirty miles.

This company handles Atlas and Wabash Portland cements and Universal cement, plaster of the American Continental Plaster Company, of Lawrence, Kan., and lime, both bulk and hydrated, from Huntington, Ind. Its warehouse holds 500 barrels of cement and its lime house a carload of bulk lime. Two teams are used to deliver this material to jobs in the city and its immediate vicinity.

B. A. Archey.

B. A. Archey, dealer in coal and building material, has his office and yard at 306 west Washington Street. A switch track from the Lake Erie and Western Railway runs back of his yard and within a foot of his warehouse where, Charles Boggs, superintendent of the yard, stated 1,500 barrels of cement, lime and plaster were stored.

He further said that the yard across the alley, which practically adjoins the one occupied for five years, was being put in shape by Mr. Archey for occupation. A warehouse, office building and lime house of concrete were in process of construction and would be completed in a short time, which would give him the additional facilities required for his increasing business.

He carries Lehigh Portland cement, plaster from Grand Rapids, Mich., hydrated lime from the Kelly Island Lime Company, sewer pipe and flue lining from Louis McNutt, Brazil, Ind., and cement blocks and bricks. He delivers material by team to jobs within three miles and ships by rail to the small towns surrounding Frankfort, thirty miles distant.

MARTINSVILLE.

C. F. Schnaiter.

C. F. Schnaiter, dealer in building material and feeds, has his office and yard corner Morgan and Wayne Streets. His main yard is on the Vandalia Railroad, with suitable sidetrack running into yard alongside the warehouse, which has a storage capacity of 700 barrels of cement and 300 barrels of plaster. The lime house, built on the principle of a refrigerator, stores two carloads of lime.

The yard is conveniently arranged for handling material and promptly delivering it. He handles Lehigh cement, plaster from the United States Gypsum and American Cement Plaster Companies, lime in bulk from the Ohio and Western Lime Company, Huntington, Ind., and the Mitchell Lime Company, Mitchell, Ind., sewer pipe and fittings from Louis McNutt, Brazil, Ind.

The territory in which he sells material is in a radius of twenty-five miles of Martinsville. One-sixth of the cement he sells is to farmers, who use it for foundations and floors. He sold to one farmer last spring one carload of cement. His father, William Schnaiter, who retired five years ago, had this business forty-two years. The son has greatly increased it through his energy and activity.

H. E. Rutledge.

H. E. Rutledge, dealer in coal and cement, has his place of business at 200 West Harrison Street. His warehouse holds 200 barrels of cement. He handles Universal Portland cement, his trade extending in a radius of about fifteen miles of Martinsville, selling to farmers. He has lived here over thirty years, is popular and an old settler.

A. R. Shireman & Son.

A. R. Shireman & Son, dealers in coal, wood, hides, wool and cement, have their office and yard at 251 west Morgan Street, Martinsville. The yard has a switch track running into it from the Vandalia Railroad. Their warehouse has a storage capacity of 400 barrels of cement. They handle the Speed Louisville cement, which they deliver by team to all parts of the city and its immediate vicinity. They have a good trade, a great portion of which is in the surrounding country.

GREENCASTLE.

Marshall & O'Hair.

Marshall & O'Hair, dealers in flour, feed and building material, have their store at 22 Vine Street, Greencastle. Their yard is on the corner of North Vine and Columbia Streets, occupying a quarter of a block, and has excellent facilities for handling and delivering material.

Their warehouse has a storage capacity of 300 barrels of cement, plaster and lime.

They handle Atlas and United States Portland cements; plaster from the American Cement Plaster Company, and lump lime in barrels and hydrate in sacks from Huntington, Ind., sewer pipe, drain tile, fire brick, fire clay, etc., from William E. Dee, of Chicago, Louis McNutt, Indiana, and the Chicago Fire Brick Company. This business was established twenty years ago, the present firm succeeding the old seven months ago. N. C. O'Hair was born in Greencastle and M. M. Marshall has lived here for years. Their trade extends over the entire county.

O. L. Jones & Company.

O. L. Jones & Company, dealers in flour, feed and building material, are at 117 West Franklin Street, Greencastle. The business was established nine years ago, and two years ago J. B. Johnson was admitted to partnership.

Their warehouse has a storage capacity of five hundred barrels of cement, plaster and lime.

They handle Lehigh and United States Portland cement, plaster from the United States Gypsum and Acme Cement Plaster Companies. They handle lime both in bulk and in barrels, and the hydrate in sacks from Huntington and Bedford, Ind.; sewer pipe, drain tile, fire brick and fire clay from William E. Dee, of Chicago, and Louis McNutt, of Brazil, Ind.

The yard is on the Vandalia Railway, which is used solely for storage. The business of this firm is confined to Putnam County. Deliveries of material are made by team in the corporate limits of the city and immediate vicinity.

LEBANON.

The Wilcox Brothers Manufacturing Company.

The Wilcox Brothers Manufacturing Company, dealer in building material, has its office and yard at 415 South Meridian Street. A switch track from the Central Indiana Railroad runs into the yard alongside the cement, plaster and lime warehouses. The yard, with its switch and team track and driveways apart every forty feet, possesses conveniences for handling all its material, unloading cars either into warehouse or wagon and loading wagons with material for delivery, few yards in the state can beat.

Furthermore, the company has bought and will operate in the course of thirty days, two automobile trucks with which it will become practical to deliver material to points forty to fifty miles distant.

The cement warehouse has a storage capacity of five hundred barrels of Wabash cement, which the company handles. Lime from Huntington, Ind., in barrels, and plaster, it stores in a separate warehouse holding three hundred barrels. It handles the product of the United States Gypsum Company; sewer pipe, flue linings, fire clay and fire brick from William Dee, of Chicago, and bank and torpedo sand. The sewer pipe and the sand it stores in the open in the yard.

The Wilcox Manufacturing Company is a heavy contractor in public works, schools and residences.

The Campbell, Smith, Ritchie Company.

Campbell, Smith, Ritchie Company, dealer in lumber and building material, has its office and yard at the corner of Ryan and South Streets. A private switch track of its own from the Big Four Railway runs alongside its lumber mill and cement warehouse, which has a storage capacity of eight hundred barrels of cement.

Driveways run through the yard, touching all points where material is stored, saving labor in handling it and making delivery by team easy and prompt. Two teams are used to do the hauling.

Universal and Lehigh are the cement handled; hydrated lime from Huntington, Ind., and plaster from the Grand Rapids American Plaster Company.

Sewer pipe, flue lining, fire clay, fire brick from Louis McNutt, of Brazil, Ind. Its business extends to the surrounding country of Lebanon probably twenty-five miles. The company was established in 1891 and does a very large business in so small a town.

The Pinnell-Coombs Lumber Company.

The Pinnell-Coombs Lumber Company, dealer in lumber and building material, with office and yard at the corner of South and West Streets, has been in business twenty-five years.

A switch track from the Big Four road runs through the center of the yard alongside of the cement and lime warehouses. Driveways through the yard reach every part where material is stored and economize by this arrangement in labor, handling the material stored in the yard, and results in prompt delivery, which is an important element in successfully conducting this business.

Two teams are required to do the hauling to the jobs in Lebanon and its immediate surroundings.

Its warehouse holds one thousand barrels of cement, lime and plaster. The principal brands handled are Atlas and Lehigh and plaster from Grand Rapids, Mich.; lime from Speed & Company, of Louisville; hydrated lime in sacks and lime in barrels; sewer pipe, flue lining, fire brick and fire clay from Louis McNutt, Brazil, Ind., and Robinson Clay Products Company, of Ohio. This company has been doing a large business in this state for fourteen years.

CRAWFORDSVILLE.

The Mercer-Winchell Lumber Company.

The Mercer-Winchell Lumber Company, dealer in lumber and building material, is one of the most prominent concerns in its line in Crawfordsville and an important factor in supplying building material in Montgomery County.

F. E. Eastlack, assistant manager of the company, said, "Our location of yard, 311 North Green Street, with the tracks of the Monon Railway right across the street, gives us splendid facilities for receiving material by rail. We have five driveways which touch every part of the yard where material is stored, making the handling of it economical and its delivery to jobs prompt, which is appreciated by our patrons in this county.

"Our warehouse has a storage capacity of nearly eight hundred barrels of cement, lime and plaster. We handle Lehigh cement, plaster from the United States Gypsum and American Plaster Companies, hydrated lime of the Kelly Island Lime and Transport Company and from Huntington, Ind., sewer pipe, flue lining, fire brick and fire clay from Louis McNutt, Brazil, Ind. Our trade in building material extends all over Montgomery County and it requires five teams to do our hauling, delivering this material to its final destination.

Smith & Duckworth.

Smith & Duckworth, dealers in lumber, coal and building material, with office and yard at 220 East Market Street, were established twenty-two years ago. Their yard is conveniently located to the Monon Railroad tracks and most admirably arranged for handling building material economically and promptly.

The storage capacity of their warehouse is three hundred barrels of cement, one hundred and fifty barrels of plaster and two hundred barrels of lime. They handle Universal cement, Mitchell Lime Company's lime in barrels, and the Monarch hydrated lime of the National Lime & Stone Company, of Carey, Ohio, and plaster of the Grand Raipds Plaster Company. Delivery to jobs within the city limits is made by team, and the territory they sell building material in extends all over the county. Mr. Smith settled in Crawfordsville in 1883. The firm has been doing a good business and is favorably known throughout the county.

Joseph Binford & Son.

The lumber, coal and building material business of Joseph Binford & Son was established twenty years ago, and the present firm has been in existence ten years. They are located at 215 and 219 South Washington Street. The yard, with its driveways passing close to the warehouse and the material stored in the open, makes the handling of it easy and economical, and insures promptness of delivery, which has gained for the firm an enviable reputation which it has upheld for years.

Their warehouse has a storage capacity of three hundred barrels of cement and lime. They handle Superior Portland cement, hydrated lime and lime in barrels from Huntington, Ind., sewer pipe, flue lining, fire clay and fire brick from Louis McNutt, Brazil, Ind., and the Robinson Clay Products Company, of Ohio. Their railroad facilities for shipping are good and the territory they cover extends to about fifteen miles of surrounding country of Crawfordsville.

The Shaw & Clyne Coal Company.

The Shaw & Clyne Coal Company, successor to the Hall Coal Company, located at 129 North Market Street, has been in business in Crawfordsville for seven years.

They handle Medusa cement and a full line of sewer pipe, flue lining, fire clay and fire brick. Its warehouse has a storage capacity of three hundred barrels of cement. The yard is conveniently arranged to handle this material economically and promptly. Its territory is mostly confined to the city, where the company makes deliveries by team within the corporate limits. It uses four horses and two double teams.

Mark Hayes.

Mark Hayes, one of the old settlers of Crawfordsville, dealer in coal and sewer pipe fittings, is located at the corner of Green and Pike Streets. He handles sewer pipe, flue lining, fire brick, fire clay, etc., of Louis McNutt, of Brazil, Ind. He has been in business six years and does a large trade in coal, handling sewer pipe as a side line. The territory in which he sells is confined practically to the city. He has two double teams and four horses, used for delivering material to all parts of Crawfordsville.

VALPARAISO.

W. L. Wilson.

W. L. Wilson, dealer in all kinds of building material, lumber and coal, has his office and yard located at the corner of Washington and Monroe Streets. His yard is admirably arranged for promptly handling building material, a switch track from the Pittsburgh, Ft. Wayne & Chicago Railroad running through the yard beside the coal sheds and alongside the cement warehouse, where he stores Marquette cement. Lime he handles in bulk from Dolese & Shepard, which he stores in a lime house in the yard built on the principle of a refrigerator. He delivers lime by team in the city in one hundred pound lots.

Mr. Wilson said that in course of thirty days he would put in another switch track from the New York Central & St. Louis Railroad, which will run alongside the lime house and other parts of the yard, which will give him the needed facilities for handling and storing a larger line of sewer pipe, flue lining, fire brick, fire clay and other building material this fall.

The Foster Lumber & Coal Company.

The Foster Lumber & Coal Company's office and yard is located on Calumet Avenue near the Grand Trunk Railway's tracks, with a switch track running into its yard. The principal business is lumber and coal. In building material it handles Lehigh cement, sewer pipe fire brick, fire clay, etc., of the Chicago Fire Brick Company. Its warehouse has a storage capacity of two hundred barrels of cement. All

this material is sold and delivered by team to jobs in the corporate limits of Valparaiso. The company has excellent facilities for handling cement, sewer pipe and fittings, which it sells within a territory covering perhaps a radius of twenty-five miles. This company was established twelve years ago.

Dille & Harris.

Dille & Harris, successors to H. C. Johnson & Company, with office and yard at 708 Valparaiso Street, dealers in coal and building material, is the agent in Valparaiso for the Universal Portland cement; keep gravel, crushed stone, torpedo and bank sand, Paroid roofing material of F. W. Bird & Son, East Walpole, Mass., and manufacture concrete blocks for foundations.

A switch track from the Grand Trunk Railway runs into their yard alongside of their warehouse, which has a storage capacity of one thousand barrels of cement. A driveway running through the center of the yard facilitates the prompt handling of material stored there, which they deliver by team to jobs in the city.

Mr. Harris is a civil engineer, and for two years was in charge of construction work in the city engineer's office at Grand Rapids, Mich. Mr. Dille is known in Valparaiso as a large contractor, building chiefly bridges and viaducts.

LOGANSPORT.

C. L. Dilley & Company.

C. L. Dilley & Company, of which C. L. Dilley is the proprietor, has its office and yard at 515 Market Street and deals in coal and building material. The tracks of the Wabash Railway pass by its warehouse, which has a storage capacity of one thousand barrels of lime, cement and plaster. The yard is divided by driveways in such a manner that all material stored there is easily and readily handled. Its coal sheds are said to be among the best in Logansport.

The lime house, with storage capacity of one carload, in which lime in bulk is stored, is built on the refrigerator principle. A feature of this yard is its equipment of large slack boxes and lime beds, which obviates all chance of loss from air-slacking of lime. They furnish lime putty or slack lime at a given price per cubic foot.

They handle Lehigh Portland cement, hard plaster, pulp and stucco of the United States Gypsum and American Cement Plaster Companies, bulk and hydrated lime and mortar stains, sewer pipe, flue lining, fire brick, fire clay, from the Buckeye Fire Clay Company, of Uricksville, Ohio; white sand from the Ottawa Silica Sand Company, pressed and common brick, roofing material of all kinds, and put on tar and gravel roofing. They also sell hollow concrete building blocks, fertilizers, feed and flour. The firm was established in 1896. All this material is handled by team to jobs in the city and vicinity.

A. J. Gallion.

A. J. Gallion is among the prominent and oldest dealers in builders' supplies in Logansport, with office at 500 High Street. The storage capacity of his warehouse is six hundred barrels of cement, lime and plaster.

The principal brands he handles are Wabash, Atlas and Speed cements; lime in bulk from Huntington, Ind.; lime in sacks from Woodville, Ohio; plaster from the Grand Rapids Wall Plaster Company and Acme Plaster Company, St. Louis; sewer pipe and fittings from Louis McNutt, Brazil, Ind., and gravel roofing material from the Garry Iron & Steel Company, of Cleveland, Ohio. All the material sold is delivered by team, the average haul being three miles.

Mr. Gallion has lived fifty-one years in Logansport, was seventeen years a contractor, paving streets, laying sidewalks and building foundations, and nineteen years conducting his present business.

Philip Voorhees & Son.

Philip Voorhees & Son, whose office and plant is located at 400 Sycamore Street, is a dealer in lumber, hardware and planing mill work, cement, lime and brick. This firm has been in business in Logansport twelve years. It handles the Universal Portland cement, the plaster of the Grand Rapids Plaster Company, and lime. Their warehouse has a storage capacity of four hundred barrels of cement and plaster. It delivers all the material by team to the job in city and vicinity and keeps two teams busy daily.

Arthur Wilson Voorhees, who has grown up in the business, was admitted to partnership two years ago. The firm's motto is "We furnish everything to build any kind of house from top to bottom."

James I. Barnes.

James I. Barnes is a dealer in builders' supplies, with office and yard at 4 to 8 Canal Street, with a switch from the Pennsylvania Railway running alongside the yard and warehouse. At the Vandalia station is located another yard, used for storage purposes. C. A. Smith, superintendent of the yards, said: "We carry Wabash, Burt, Atlas, Speed, Louisville and Universal cements. The capacity of our warehouse is five thousand barrels of cement, plaster and lime. Our lime house, which was specially built for storing lime, holds three carloads. We handle hydrated lime, sewer pipe, wall coping, flue lining, fire brick, fire clay and plaster from Grand Rapids, Mich. Mr. Barnes operates a brick yard in Logansport whose daily capacity is forty thousand bricks. He is a big contractor, doing a large amount of reinforced concrete work, public buildings and government work." All material sold is delivered by team to jobs in city and vicinity.

E. D. Closson.

E. D. Closson, dealer in coal, cement, lime, plaster and brick, has his office at 222 Fourth Street and yard at Ninth and Erie Streets, with switch track from the Wabash Railway running into it and alongside of the warehouse, which has a storage capacity of four hundred barrels of cement, plaster and lime. The principal brands he handles are the Alma, Universal and Lehigh Portland cements, hydrated lime from Woodville, Ohio, and plaster from the United States Gypsum and American Gypsum Companies, and also carries common brick. Two teams are required to do the hauling of material to the jobs in the city and vicinity. He has been in business in Logansport thirty-four years.

M. F. Bligh.

M. F. Bligh, successor to Stevens-Bligh Company, dealer in builders' supplies, has his office, planing mill and lumber yard at First and Canal Streets. The yard is on both sides of the tracks of the Pennsylvania Railway, giving the best facilities for shipping and handling material.

Next year he intends to use the ground across the track which divides the yard and where he will build a large warehouse for storing cement. His yard has a most convenient location in Logansport for handling building material supplies. The storage capacity of his present warehouse is seven hundred and fifty barrels of cement and plaster. He carries the Wabash and Atlas Portland cement, plaster of the Grand Rapids Plaster Company, and common pressed brick. Three single and two double teams deliver material to jobs in all parts of Cass County. Mr. Bligh is a pioneer in his line of business in Logansport.

Further visits to Indiana retailers will be published next month.

Will Increase Brick Output.

ROCK ISLAND, ILL., Aug. 10.—The Black Hawk Clay Manufacturing Company makes the announcement that it will install during the coming fall and winter an addition to its present plant of 40,000 bricks a day. The new addition will be what is known as a stiff mud plant. The new plant will cost in the neighborhood of $30,000 and it will be used for the manufacture of hollow blocks, building blocks and vitrified brick.

The Indiana Pressed Brick Company has been incorporated at Indianapolis, Ind., with a capital stock of $300,000, by John H. Radke, Emma Radke and Charles Kulpinski.

Brick and Tile Factory.

MASON CITY, IOWA, Aug. 10.—Articles of incorporation have been drawn for the second brick and tile factory by the Farmers' Coöperative Company of this place, with a capital stock of $400,000. This is the ninth similar factory here. J. H. Brown of Rockwell is president, E. G. Dunn, vice president; W. R. Flemming, secretary, and G. H. Hughes, treasurer. The board of directors are the officers with W. H. Gleason, T. L. Flemming, M. J. Fitzpatrick of Mason City and J. F. Flemming of Chicago.

New Lime Company Incorporated.

PORTLAND, ME., Aug. 10.—The Warren Lime Company, organized at Rockland, Me., to deal in lime products, have filed a certificate of incorporation at the office of the secretary of state. Capital stock, $100,000, $300 paid in; par value, $100,; incorporaters, William T. Cobb, president; Arthur S. Littlefield, Frank C. Norton, treasurer, Rockland.

The J. E. Bartlett Company, Jackson, Mich., has been awarded the contract to furnish 250,000 face sand-lime brick for the Newcomb-Endicott department store building at Detroit, Mich.

The Production of Cement In Canada, 1908.

The mines branch of the Department of Mines has received from the producers complete statistics of the production of Portland cement in Canada in 1908. According to these returns the total quantity of Portland cement made in Canada in 1908 was 3,495,961 barrels of 350 lb. net, as compared with 2,491,513 barrels in 1907, or an increase of 1,004,448 barrels or 40.3 per cent. The total quantity of Canadian Portland cement sold in 1908 was 2,665,289 barrels as compared with 2,436,093 barrels in 1907, or an increase of 229,196 barrels or 9.4 per cent. The total consumption of Portland cement in 1908, including Canadian and imported cements, was 3,134,338 barrels (of 350 lb. net) as compared with 3,108,723 barrels in 1907, or an increase of 25,615 barrels or 0.8 per cent.

The production of Portland cement in 1908 was derived from twenty-three operating plants, with a total daily capacity of 27,500 barrels, equivalent to about 8,250,000 barrels per year of 300 days, or 10,000,000 if all plants were run continuously for the whole year. The operating plants were distributed as follows: One in Nova Scotia using blastfurnace slag; one in Manitoba making a natural Portland cement; one in British Columbia, two in Alberta and three in Quebec using limestone and clay; and fifteen in Ontario, of which twelve use marl and three limestone. The total daily capacity of the plants using marl was 10,400 barrels, as compared with 17,100 barrels per day for all other plants. Of the total quantity of cement made in 1908, 1,573,090 barrels were made from marl and 1,922,871 barrels from limestone and slag.

It is not possible to give the detailed production in all of the provinces without divulging confidential returns. The following groupings, however, may be made: (1) Quebec and Nova Scotia; (2) Ontario; (3) Alberta, Manitoba and British Columbia.

The production in these groups in 1907 and 1908 was as follows:

I.—QUEBEC AND NOVA SCOTIA.

	1907.	1908.
Cement sold ..... bbls.	456,579	742,021
Cement manufactured..... bbls.	456,625	953,712
Stock on hand January 1..... bbls.	40,200	40,246
Stock on hand December 31... bbls.	40,246	244,937
Value of cement sold..... dols.	664,866	1,051,144
Wages paid..... dols.	104,116	293,855
Men employed..... No.	305	795
Total daily capacity of operating plants..... bbls.	2,300	7,900

II.—ONTARIO.

	1907.	1908.
Cement sold..... bbls.	1,775,484	1,518,886
Cement manufactured..... bbls.	1,816,662	2,016,737
Stock on hand January 1..... bbls.	242,248	314,579
Stock on hand December 31... bbls.	283,426	812,430
Value of cement sold..... dols.	2,705,167	1,909,815
Wages paid..... dols.	684,964	636,955
Men employed..... No.	1,192	1,619
Total daily capacity of operating plants..... bbls.	8,400	14,900

III.—MANITOBA, ALBERTA AND BRITISH COLUMBIA.

	1907.	1908.
Cement sold..... bbls.	204,030	397,382
Cement manufactured..... bbls.	218,226	525,512
Stock on hand January 1..... bbls.	16,567	28,524
Stock on hand December 31... bbls.	30,763	156,654
Value of cement sold..... dols.	407,295	748,180
Wages paid..... dols.	167,000	344,828
Men employed..... No.	289	615
Total daily capacity of operating plants..... bbls.	2,700	4,700

Prices.—As already stated, the average price at the works during 1908 as returned by the manufacturers was 1.39 dols. per barrel. Prices in car lots, ex package, at Toronto and Montreal, according to trade quotations, ranged from 1.90 dols. in January to as low as 1.55 dols. in December. In Winnipeg prices ruled during the latter half of the year at about 2.40 dols.

Imports and Exports.—There is very little cement exported from Canada, only 34,591 dols. worth being recorded for 1903. The imports of Portland cement, which were, previous to 1904, larger than the Canadian production, have been decreasing since 1906, and were in 1908 equivalent to but 17.6 per cent of the sales of Canadian cement, or 14.9 per cent of the total consumption. A duty of 12½ cents per 100 lb., equivalent to 43¾ cents per barrel of 350 lb. net, is levied on imports. The weight of the package is, however, included for purposes of duty.

The imports of cement during 1907 and 1908 by countries were as follow:

	1907. Cwt.	1908. Cwt.
Great Britain.....	1,003,434	601,527
United States.....	1,134,113	902,576
Belgium	182,943	128,738
Other countries.....	33,704	8,831
Totals	2,354,204	1,641,672

Fire at Lime Kilns.

A fire at the lime kilns of the Waukesha Lime and Stone Company, August 11, did damage to the extent of several hundred dollars.

CEMENT

On the Upward Bound.

The cement situation is better now than for some time past. With but few exceptions every cement plant in the country is now in operation. Prices are getting back to a normal level and the prediction is freely made that the mills will be unable to meet the demand if it keeps up as it has. In Kansas City and the adjoining territory prices have not been what they should be, but manufacturers believe that this condition will not last long, as the demand is increasing steadily. The price war has had the effect of loading up the dealers, who are now carrying more cement than ever before. Contractors are hurrying forward their construction work in order to take advantage of the situation.

The consolidation of many of the leading cement companies in Canada will have a salutary effect on the situation up there, as the mills in the combine produce two-thirds of all the cement and will be able to hold the price up pretty well.

The talk of a combination in the East controlling prices seems to be without foundation, as while prices are ruling firmer, it is not due to any concentrated effort on the part of the manufacturers, but to the increase in the demand.

The warehouses in the Lehigh Valley are practically depleted and some of the companies are having difficulty already in keeping up with their orders.

The central West and the South are beginning to feel the effects of the building boom, and prices are steadily going higher. In Baltimore it is said that by September 1 prices will be advanced between ten and fifteen cents a barrel.

The immense number of building projects now under way have had the desired effect of stiffening prices.

In some parts of the country a car shortage is freely predicted, as the fall movement of grain and cotton will take every available car.

Some of the railroads have allowed their rolling stock to get down to a low ebb, and now that business has opened up with a rush are hurrying to get more cars built and repairing the old cars without delay. This is quite a contrast with the situation a year ago, when there were thousands of idle cars and locomotives all over the country.

With the return of prosperous conditions the railroads are again exerting themselves making improvements and extending their lines.

It begins to look like before the end of the year all traces of the panic will be past.

The agitation started by the fire insurance companies by the publication of statistics showing the immense fire losses in this country is beginning to bear fruit. Every town and hamlet is examining its existing building laws and inserting clauses which will compel fireproof construction. No better advertising for the cement manufacturers could have been devised than the publication of these reports by the fire insurance companies. The people at large are aroused as never before, and architects who have scoffed at concrete and reinforced concrete have been caught in the tidal wave of public opinion. A country which loses by fire annually one-third of all the buildings which it erects would go bankrupt if it were not for its immense resources, and histories of all countries prove that where these great resources are wasted the time must inevitably arrive when the people will either have to learn to husband those resources or stand still. We will advance to the point where we can go no further.

The trouble with all of us in this country is that we are spendthrifts and prodigals, and until we learn thrift and economy we will be slow in developing. It is quite true that we are still young, but the time to learn is when we are young, strong and vigorous, and not when we are old and feeble and no longer able to do so. Uncle Sam has realized that he must take care of his forests, improve his waterways and conserve his resources. With the end of the forests we must learn to utilize some other material for structural purposes. It will not be many years before restrictions will be placed on frame building to such an extent that they are sure to decrease in number.

The manufacturer has turned to concrete construction through economy, but the home builder will turn to it through safety, for what matters the cost when human lives are at stake?

Will Build New Plant.

LITTLE ROCK, ARK., Aug. 17.—The company owning the White Cliffs cement plant, near here, is preparing to build a modern plant of three thousand barrels' capacity per day, and to resume operations. The old plant has been idle for many years, transportation and fuel being too expensive, but now that the Memphis, Paris & Gulf Railroad passes the plant, and gas is becoming available in that section for fuel, the outlook is more favorable. L. B. Palmer is in charge of the proposition.

Personnel of New Organization

NEW YORK, N. Y., Aug. 16.—The Tidewater Portland Cement Company 115 Broadway, has awarded the contract for the erection of their plant to be built at Union Bridge, Md., to the Fuller Engineering Company, of Allentown, Pa. The plans call for a mill which will produce 800,000 barrels of Portland cement of ordinary color and 200,000 barrels of white Portland cement. The Tidewater Portland Cement Company has a capital stock of $4,000,000 and a bond issue of $1,750,000. The company's consulting engineer is Richard K. Meade, of Nazareth, Pa., and its consulting geologist is Wm. Bullock Clark, of the Johns Hopkins University, Baltimore. The other officers include: President, John K. Tener, member of Congress and president of the First National Bank of Charleroi, Pa.; vice-president, Joseph T. Fanning, president of the Republic Finance Company, 115 Broadway, New York, which is financing the enterprise; secretary, Owen B. Murphy, of New York. It is understood that the company also plans to erect kilns for burning lime and a plant with an annual capacity of 200,000 barrels of hydrated lime.

Plant Soon to Be Erected.

OKLAHOMA CITY, OKLA., Aug. 16.—At a meeting of the officers of the Oklahoma Portland Cement Company, held in the offices of the company in the Lee Building yesterday, it was announced that the concern has purchased a tract of land near Hartshorne, Okla., and that a plant would be erected. F. C. Savage, president of the Hartshorne Chamber of Commerce, attended the session. The Freeborn Engineering and Contracting Company, of Kansas City, has been given the contract for the erection of the plant.

Adding Equipment.

SEYMOUR, IND., Aug. 17.—The Lehigh Portland Cement Company is making some extensive improvements in their plant at Shale Hill, about eight miles southwest of this city, near Shields. Work will begin at once on a new addition to the mill, and a new stone crusher will be put in. A new dryer and boiler are being put in.

Will Build at Los Angeles.

LOS ANGELES, CAL., Aug. 16.—The Victor Portland Cement Company has decided not to build its cement plant at Victorville, having arranged for a site in Los Angeles. The plant will cost in the neighborhood of $700,000, and will be one of the biggest in the country. The company is now building a railroad from Victorville to its deposits, a distance of about twelve miles. The road will cost about $750,000. The plant will have a capacity of 1,500 barrels daily. Marine, white and commercial cement will be manufactured.

Canadian P'ants Merge.

MONTREAL, CAN., Aug. 16.—Plans have been completed for the merger of several of the largest cement plants in Canada. The company will be known as the Canadian Consolidated Cement Company, and will have a capital of $25,000,000. The new concern will include the International Portland Cement Company and other leading concerns, representing about two-thirds of the total output of the existing mills.

W. F. Allen, of Chanute, Kan., was appointed receiver of the Chanute Cement & Clay Products Company. The application was made by E. Donnelly and others, who had mechanic's liens against the company.

The plant of the Bonneville Portland Cement Company at Siegfried, Pa., was sold at receiver's sale to Chas. M. W. Keck, president of the Allentown National Bank, July 23.

The Dexter Cement Company, of Nazareth, Pa., held its annual meeting recently at the office of the company at the works. The report was very encouraging, and the stockholders were pleased with the financial condition of the company. All the old directors were reëlected.

About the Colloidal Theory.

There is an established opinion in some quarters that the process of hardening in Portland cement and other hydraulic mortars is the result of some kind of colloidal phenomena brought about by the assembling of the proper elements in the correct proportions to induce such chemical change. This theory now has so much of a following that it might almost be called the colloidal school, or sect, of the cement industry, and their opinion of this most important feature of the material is opposed to the original and more widely embraced doctrine that all types of induration of cements is due to crystallization. The microscope does not disclose any crystal structure, either in hardened neat cements or in hardened sand mortars; that is to say, if such exists the crystals are so small as to be imperceptible, and consequently out of the range of distinct study. Practically all of the progress that has been made in the application of cements during the last two or three decades has been based upon the idea that a hydro-calcium silicate is formed by the recarbonating of calcined mixtures containing the proper ingredients to provoke such a type of crystallization. Dr. Wm. Michaelis, Sr., of Germany, than whom there is no more eminent authority, at the beginning of his career subscribed to the crystallization theory and through all the years of his activity as a chemist he has supported it. The crystallization school comprises the vast majority of the experts now living; in fact the colloidal school only came into prominence within the last few years. Particularly in Germany, but also in France and England, there have been published numerous opinions in support of the colloidal theory of induration, but in this country practically nothing has appeared, although some of our leading chemists acknowledge a strong leaning in the direction of the colloidal school. Recently one of our leading cement chemists remarked to the writer that either way of looking at the matter, all study must end in theory, because if crystals are formed they are unlike other crystals and are so minute that their structure is practically unimportant, while if the swelling and soaking or colloidal action is the cause it is equally provided for in engineering practice. As nearly all colloids are sensitive to even low variations of temperature, while most crystal formations are not to any comparable extent, this subject is well worthy of further study and discussion, because it has a direct bearing upon the exclusive valuable properties of cementaceous materials. Such study may develop a new line of thought with regard to the selection of aggregates for concrete and cement mortars and make clear the causes of the wide divergence in results in practical uses for cement. Further, more intelligent preparation of the mass before deposition, and its treatment afterwards, may be improved so that every calculated result can be secured.

In a recent number of the *Tonindustrie Zeitung*, Dr. Michaelis, Sr., writes interestingly as follows:

"The phenomena of swelling require certain means, and these may be of a physical, chemical or some other nature. As a matter of fact it has to be admitted that science up to this date has not made great strides to define clearly and distinctly what are the real processes which make a body swell.

"In consequence of our little knowledge in the matter, we consider swelling an increase in volume, while on the contrary it means a process of exothermic condensation. In other words, in the process of swelling, gelatination, absorption and coagulation heat is developed which in turn forms a product taking up a smaller space than the volume of the swelling, gelatinous, absorbing and solid body itself plus the volume caused and distributed through the process of swelling.

"Colloids are microheterogeneous substances which in their different phases or conditions—solid, liquid or gaseous—show great propensities to assimilate freely with other materials, and they appear to the eye to so mingle upon a definite system. They are also called disperse systems, consisting of the dispersoid and the dispersoid germ. The most important dispersoids to be considered here are three, which as a rule we find in the following conjointly compound constituents. Suspensoids, consisting of a liquid and a solid; emulsoids, liquid and liquid; and foams, liquid and gas.

[A thorough study of the chemistry of colloids, by Wm. Oswald, has been published by Theodore Steinkopff, in Dresden, Germany.]

"The definition of swelling is 'the transformation of a solid body into a kind of gelatin after the former has come in contact with a certain suitable liquid.'

"Gelatination means the forming of emulsions, i. e., the creating of emulsoidic systems of a higher order, in which the gelatin consists of two liquids, which in turn become emulsoids. Gelatine is nothing

else but a highly concentrated emulsoid. The change in the condition is caused through a reduction in the degree of distribution under retention of the homogenity of the phrase liquid plus liquid.

"Just as the gelatination progresses so increases the density of the new formation, as well as the inner friction. Stability and elasticity of form are characteristic of gelatines.

"Absorption means the condensing of the dispersing phase of a colloidal or a molecular-acting solution on the surface of a solid, liquid or gaseous body, which at the same time disturbs the homogeneous system by withdrawing a part of the dispersing phase from the dispersion germ or originator. Absorption connections can be made between dispersing systems, where the absorbing and the absorbed systems are colloidal solutions, whereby a mutual absorption of colloids takes place.

"By the coagulation of colloidal systems we understand a decrease in the degree of distribution in connection with the disappearance of an equal division of homogenity. The coagulation (which means to change a liquid into a clot or a jelly by heat, chemical action or fermentation) develops often to microheterogeneous systems and has therefore, in opposition to the chemical conditions existing within, to be considered as an exterior matter. Precipitation, gall formation, coagulation, etc., are often synonymously used.

"Recapitulating briefly, therefore, gelatination differs from coagulation in so far as the latter, in contrast to the former, in its homogeneous conditions, disappears, besides there is a considerable change in the dispersing phase caused through withdrawal of the means of dispersion.

"One will notice that in all these processes, actions and reactions, hydrogeles are produced, with the exception of absorption, which in forming consists only of the taking on of colloidal systems.

"I am still often confronted with the idea that I am held responsible for the doctrine that the hardening of hydraulic adhesive substances is caused through swelling. I have never said anything of the kind, while the attentive reader of my books must have found that I laid down just the opposite law. 'Not swelling, but skrinking, is the cause of hardening,' I have declared. When glue is swelling it does not bind, but when the swelled glue begins to shrink and dry up it at once begins to bind. Besides Dr. Wm. Michaelis, Jr., and myself nobody up to this day has been able to give any tenable explanation of hydraulic hardening than through a process of crystallization. Nobody has yet shown how the hydraulic mortar can be made waterproof. We alone have shown that the hardening is caused mainly through the sucking out of the hydrogeles through the hardening process, which in turn, through swelling, gelatination, coagulation and absorption, found their existence."

Shipping Cement to Panama.

NEW YORK, Aug. 17.—The movement by the United States Government of 1,000,000 tons of Atlas Portland cement to the Isthmus of Panama has begun. The Ancon, of the Panama Railroad-Steamship line, sailing Thursday on her first voyage to Panama, will carry 87,144 bags and 21,348 barrels, which is equivalent to 43,134 barrels, or 8,626 tons. Her cargo will also include supplies for the Panama Railroad.

The Cristobal, now returning to New York from Colon, carried the first 5,000 tons of the big contract, and it is expected that the two ships will carry 9,500 tons each voyage when the Canal Commission is in a position to receive this quantity. The vessels are scheduled to make one voyage a month, which will mean that 19,000 tons of cement will go forward every thirty days, if present arrangements are carried out.

At this rate shipments of the 4,800,000 barrels (about 960,000 tons) contracted for will extend over a period of nearly four years. If, however, greater quantities are needed every month, other transportation arrangements will be made.

It is said that the Government will profit by handling the contract in its own vessels instead of chartered ships. Discharging of the cargoes will necessarily be governed by weather conditions, for it stands to reason that cement cannot be handled in rain; so, if there are delays at Cristobal, the Government will not have to pay demurrage as it would in the case of steamships under charter.

The Ancon and Cristobal are twin screw vessels, steam about thirteen knots, and have accommodations for sixty passengers. The former is now loading in Communipaw.

There is connection between this great transportation undertaking and the progress of the work, for shipping men say that the cement would not be ordered forward in great quantities unless it were needed.

Gypsum and Gypsum Products.

By Ernest F. Burchard.

The characteristic features of the trade in gypsum products in the year 1908 were a moderately decreased demand and lower prices than have prevailed at any time within the last three years. While the financial stringency of 1907 and its resultant effects on the industrial world are factors that have adversely influenced the gypsum market, the conditions noted are not to be wholly ascribed to these factors. The general decrease in the price of Portland cement, lumber, steel, brick, and other structural materials to a certain extent stimulated building operations, so that proportionately the output of gypsum was not curtailed so greatly as was that of many other mineral products. The prices were seriously affected by the industrial depression, it is true, but the general decrease in price is more directly due to the very active competition that is becoming characteristic of the gypsum business. Keen competition involving price cutting, introduction of specialties, more liberal advertising, and an aggressive campaign for trade on the part of the well-established companies have resulted in the suspension of many of the smaller plants not physically or financially fitted to withstand the strain. Concentration of interests has naturally followed. Many small plants, meritoriously situated, with good supplies of raw material, have been taken over through lease or purchase by firms that control groups of mills.

A geographic analysis of conditions is not only of interest, but is essential to a just estimate of this industry at large. In the group of Rocky Mountain and Pacific States, including Alaska, the business as a whole showed a slight increase in tonnage of manufactured products, but a small loss in total value. In Michigan the total gypsum mined slightly exceeded that for 1907, but this excess was evidently not taken up by the sales end of the industry. All the other producing localities showed moderate decreases in manufactured products and considerable decreases in values.

The three largest producers are, in order, Michigan, New York, and Iowa. Texas, Ohio, Oklahoma, Kansas, and California are also important producers.

Seven new plants were added to the list of producers in 1908, two of these being in New York, and the remainder in Arizona, New Mexico, Nevada, and Colorado. In addition, nine new mills were in various stages of construction, but not in operation. Most of these mills were in the West and Southwest.

One of the new developments is of considerable scientific as well as commercial interest. Attention has been called in the last two annual volumes of Mineral Resources, as well as in Survey Bulletin No. 223, on the gypsum deposits of the United States, to the fact that there are in the Southwest, notably in Arizona and New Mexico, deposits of gypsum sand. This sand is white to faint pink in color and is composed of fine grains of gypsum that have been broken down by stream action and water from outcrops of rock gypsum and finally worked by winds into hills or dunes. (The dunes of silica sand around the south end of Lake Michigan have been built in a similar manner.) In 1908 the utilization of these gypsum sands was begun in Otero County, New Mexico. The raw gypsum is a loose white subangular sand; all of it passes a 20-mesh sieve and about 8 per cent passes a 100-mesh sieve. The deposit lies on a flat, level plain and occurs in hills and dunes, some of which are more than 100 feet high. The material is capable of being calcined at a temperature of 250° to a plaster which is reported to be very tough and to improve with age. These deposits are reported to be about eleven miles from a railroad.

In 1907 a branch of the Atchison, Topeka and Santa Fe Railway was built to Belvidere, Kan., cutting through the gypsum beds about twenty-five miles northwest of the town of Medicine Lodge. The gypsum at this point was found to be even better adapted to the manufacture of Keenes cement than the material that has been successfully quarried from the same horizon at a point seven miles southwest of Medicine Lodge and hauled by wagon to the mill at that place. During 1908 the exploitation of the newly opened deposit gave a fresh impetus to the Keenes cement industry in southern Kansas.

In Southwest Virginia prospecting and development of gypsum lands on a large scale have been carried on during the last three years. As a result of core drilling there was located in Smyth County, Virginia, a high-grade gypsum deposit of sufficient extent and value to warrant the construction of a railroad four miles long and the erection of a modern mill. A new town, North Holston, has also been built. The gypsum is mined from a shaft 105 feet deep, and carried by an aerial tramway, 1,400 feet long, from the mine tipple to the mill. Gypsum for Portland cement making and in the form of land plaster and hard wall plaster is now being produced here on an important scale.

In 1906 Frank L. Hess, of the United States Geological Survey, made a reconnaissance of the gypsum and gypsite deposits of California. His report on the subject is now in preparation, and from the manuscript the following summary has been taken:

The gypsum deposits of the State may be divided into four classes: (1) Efflorescent deposits, (2) periodic-lake deposits, (3) interbedded deposits, (4) selenite or crystallized gypsum veins. Of these all, except the fourth class—veins—may be of value.

With regard to the development of gypsum and oil lands in California, a special correspondent of the *Engineering and Mining Journal*, in the issue of May 22, 1909, says:

"Recently large areas of land in the known oil belts have been located for gypsum, though it has been an open secret that oil was what was wanted. An agent of the Land Office has been looking into this matter, and where patents were about to issue to gypsum locators they have been notified that receipts have been issued under misapprehension of facts. They are also informed that the gypsum to be mined must have a commercial value, and in this value accessibility must be considered. If at a point remote from a railroad, where the cost of mining and hauling would preclude the possibility of selling at a profit, its commercial value would be nullified."

The quantity of gypsum mined in the United States in 1908 was 1,721,829 short tons, as compared with 1,751,748 short tons mined in 1907, a decrease of 29,919 short tons, or 1.7 per cent of the 1907 production. The total value of the gypsum products in 1908 was $4,138,560, as compared with $4,942,264 in 1907, a decrease of $803,704, or 16.7 per cent of the 1907 value. The decrease in quantity sold was entirely confined to crude gypsum both in the lump and the ground form. The prices of this class of material fell only 4 to 7 cents per ton. The quantity sold as calcined plaster actually showed an increase of 316 short tons over the tonnage sold as such in 1907, but the decrease in value was heavy, amounting to 67 cents per ton, or nearly 18 per cent of the 1907 price. The average price for calcined plaster in 1907 was $3.91 per ton; in 1908 it was $3.24.

The production of special gypsum plasters, such as Keenes cement, and of plaster specialties, such as plaster studding, plaster lath, and plaster board, is increasing rapidly. Keenes cement is a hard wall plaster, produced by completely dehydrating pure rock gypsum through long continued heating to a high temperature and adding to the ground product small quantities of alum, borax and other materials, which act as binders when water is added to the mass. This product is adaptable for fine interior finish and for ornamental plastering, caps, molds, bases, and extra fine white finish. It is also used for the manufacture of artificial marble. It finds its most ready market in the large Eastern cities.

The gypsum which is imported into the United States comes, except a few hundred tons annually from France and Great Britain, almost wholly from Nova Scotia and New Brunswick, and enters the ports of the New England and North Atlantic States, over one-half of it entering the port of New York. This imported gypsum is nearly all calcined and converted into wall plasters by plants along the seaboard as far east as Red Beach, Maine. A small quantity of the material is used crude as land plaster, and some is mixed in patent fertilizers.

Fire in Gypsum Plant.

DULUTH, MINN., Aug. 1.—Fire in the manufacturing plant of the United States Gypsum Company at this place recently did damage to the amount of $5,000, fully covered by insurance.

Plaster Plant Destroyed.

NEPHI, UTAH, Aug. 1.—The plaster plant of the Nephi Plaster and Manufacturing Company, which was destroyed by fire last spring, is being rebuilt of concrete and steel, and when completed will be a model plant. The plant is equipped with three ten-foot kettles. They expect to be in operation by September 1. J. E. Clinton is the president of this company; J. A. Hyde, secretary; H. S. Young, treasurer, and L. S. Hills, vice-president.

The Delac Plaster Company, Wheatland, Monroe County, N. Y., has been incorporated by De Lancey A. Cameron, New York; Simon W. McDonald, Munford, New York; George McKay and Robert A. Menzie, of Caledonia; Harry F. Remmington, Henry R. Howard and A. C. McGuire, Rochester.

Lime

National Lime Manufacturers' Association

Meets Semi-Annually.

OFFICERS.

William E. Carson, Riverton, Va.....President
Charles Weiler, Milwaukee, Wis.....1st Vice-Pres.
Walter S. Sheldon, Hamburg, N. J.....2nd Vice-Pres.
M. H. Deely, Pittsfield, Mass.....3rd Vice-Pres.
C. W. S. Cobb, St. Louis, Mo.....Treasurer

EXECUTIVE COMMITTEE.

William E. Carson, ex-officio; Chas. Warner, Wilmington, Del.; T. E. Fleischer, Sheboygan, Wis.

NEW CHICAGO PLANT.

Riverside Lime and Stone Company Installs Modern Outfit at the Western Boundary of the City.

There has just been completed at Lyons, Ill., an up-to-date lime plant, by the Riverside Lime and Stone Company, of which J. B. Tuthill, of the Tuthill Building and Material Supply Company, is president.

The main office of the company is located in Chicago at 229 West Sixty-third Street.

Mr. Tuthill has for many years been connected with the selling end of the lime and stone business and has only recently entered the manufacturing field.

The plant is located at the junction of the Chicago and Joliet Railroad (Summit Branch) and the Lyons Electric Railroad.

The quarry property was purchased from Fred Shultz, Sr., who is a pioneer lime man of the locality, having burned lime from this quarry for the last fifty years. Lime was all burnt in the old-fashioned, side-arched pot kilns, which certainly exhibit a remarkable contrast to the modern kilns erected by the new company.

The real estate consists of about 165 acres, of which ten acres have been quarried to the depth of 25'; the stripping on the balance of the property running from three to six feet. The rock is of dolomite formation, and runs very uniform, with a slight dip to the north, where there is a water hole sunk about 25' in depth, which takes care of all drainage.

The entire lime plant is composed of massive concrete and iron construction, which manner of building has been adopted by all modern manufacturing concerns in their recent buildings.

Great credit is due E. W. Cheney, who designed the plant and superintended the construction of same. Mr. Cheney is a young man who has experienced no little success in the construction of new and also remodeling old lime kilns; putting them on a better producing basis, with very little expense and without increasing the cost of material.

In talking with Mr. Cheney about lime kiln construction he claims the principal parts of all kilns are the firing arches, and if these are built correctly so as to prevent a backdraft, one is quite sure to get the full benefit of the heat coming from the fuel, and thereby producing the maximum amount of lime with the minimum of fuel. The character of the stone to be burned and the amount of heat required to calcine same, will largely determine the kind of fire arch to be chosen and installed.

The base or substructure of the kilns being considered are of mass concrete mixed in the following proportions: 5 barrels of 1½" crushed stone, 2 barrels sand or ½" screenings and 1 barrel of Portland cement—the same turned twice before applying water. The concrete was mixed very thin and poured into the form; the size of which for the base is 18'x12' with 12' elevation. The center of each kiln base contains an inverted cone, of concrete 2' in diameter at the bottom opening and flaring out to 6' diameter at the heighth of six feet from the bottom, and from that line going straight up cylindrically to the firebox. This inverted cone acts as a cooling pot for the lime, and is so constructed as to allow a wheelbarrow, holding one barrel (200 pounds) of lime to be placed directly under the opening. The flow of lime is regulated by a pair of iron shears, which are placed directly under and forming the bottom of the cone, and are very easily controlled by the operator.

There is also a door, 12"x16" built in the front of this cooling pot directly over the shears and facing the operator. The purpose of this is to release the lime in case lumps should wedge or the kiln should happen to sow. This door has proved a great advantage.

The main body of the kilns from the second or firing floor to the top is iron, the diameter of which is 10'6" and 33' high, divided in six sections; the first section being 8' and the remaining five sections 5' each.

The 8' section consists of three supporting legs, each of which measure 8'x3'6" and are made of 7/16" steel—this being reinforced by three angles. The two outer ones measuring 4"4"x5/16" and extend 12" below the firing floor into the concrete.

The middle angle which extends 16" above the leg acts as a brace for the first 5' section, all parts being securely riveted together.

QUARRY AND PLANT OF THE RIVERSIDE LIME & STONE COMPANY, LYONS, ILL.

At the bottom of each leg there is an angle 4"x4"x7/" running across it; in which are bored two 1¼" holes, through which the stay-bolts pass, same being built in the concrete base work; thus holding the legs stationary.

In the first, second and third sections of the iron work, there are six 8"x8" port holes, two in each sheet at different angles, for the purpose of watching the stone during the process of calcining; they also enable the superintendent to take out more lime, as by inspecting the kilns once or twice a day, through the ports, he can easily determine if they are hot enough to allow the maximum output.

These port holes are also useful in case the kiln should hang, as they allow the burner to immediately break in and drop the charge.

The fire arches, of which there are three to each kiln, are of peculiar construction to meet the special requirements of the local stone and the type of fuel used. In this case soft coal is used for firing with very good results in both kilns, for there are two now in commission and two more under construction.

The firing door is 15"x15", same being lined with fire brick which are cut to fit the bevel edges on the inside of the door. The frame for the door is made in four castiron sections, which are bolted together so as to admit of contraction and expansion, and rest on a 10" dead plate. Frames made in this manner are not so liable to warp or crack; but if such should occur the old could very easily be replaced with a new part.

Care should be taken when bolting such frames together than the joints fit properly and that the nuts for all bolts are on the outside, thereby allowing removal of any section without disturbing the framework.

The grate-bars are 4' long, one end resting on the dead plate. Most grate bars are made of cast iron, but greater service can be had by using steel bars 1"x1¼" bolted together, three to a section, as when one is burned out, the grate is not a total loss. Those that are short can be easily welded to the required length; and will then answer as well as new ones.

The ash pit door measures 12"x15" and the frame though lighter in construction is built on the same principles as the frame of the firing door.

The ash pit proper is equipped with cast-iron pans 8" in depth, covering the entire surface and kept constantly filled with water; which answers two purposes, one of which is protection to the grates, keeping them free from clinker, and the other, that the steam arising from the water by contact with the hot coals aids combustion and helps the draft.

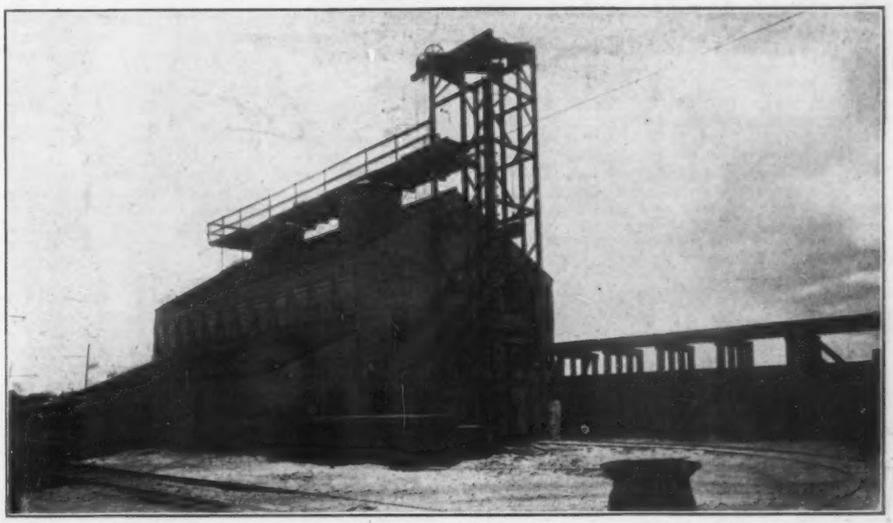
The interior of the kilns are lined with 9" fire brick, backed up with 12" common brick. The balance of the space was filled up with clay, thus leaving the diameter of the main body of the kilns 5'6". The kilns are lined to within 7' of the top, and the brick work is protected at the top by a cast-iron hopper, which is made in five sections and when bolted together weighs about 2,200 pounds. The kilns are connected above with I-beams, to which is attached 25-pound T-rails on which the quarry cars run, for the purpose of charging the kilns.

There is also a 4' hand rail and platform along the entire length of the upper structure.

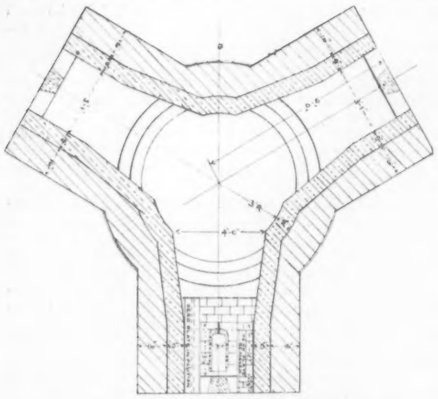
The plant is strictly electrically operated, an independent motor driving each separate piece of machinery. The motive power being furnished by the sanitary district.

The plant is equipped with a 400 cubic feet Ingersoll-Rand compressor driven by a 50-horsepower Western electric motor, which supplies the air to operate three quarry drills as well as the two small pumps which are necessary to supply water for the ash pits. The cars used in the quarry are iron, two yard, end dump 48" gauge, built by the Austin Manufacturing Company, and are hoisted up on the quarry incline by a friction hoist furnished by the same company and operated by a 40-horsepower independent motor.

At the surface the cars are either sidetracked or taken to the elevator, which is shown in the illustration, and carried to the top of the kilns. The



MODERN LIME PLANT OF THE RIVERSIDE LIME & STONE COMPANY, LYONS, ILL.



PLAN OF THE FIRING ARRANGEMENT.

loaded cars are then run onto a dumping truck, which carries them over the kilns to be charged.

This truck was designed by Mr. Cheney for the sole purpose of discharging the contents of end-dump cars, and works on the principle of a tipple, holding the car on the truck while at an angle sufficient to dump the stone, at the same time lifting the back door to allow the stone to be discharged into the kiln. The truck carrying the empty cars is then taken back to the elevator, where the car is lowered, the truck remaining on top.

The benefit of independent motors can readily be seen, as it allows any single part of machinery to be shut down without interfering with the remainder.

The building is strictly fireproof, the side walls being of brick, the beams of iron and floors of reinforced concrete.

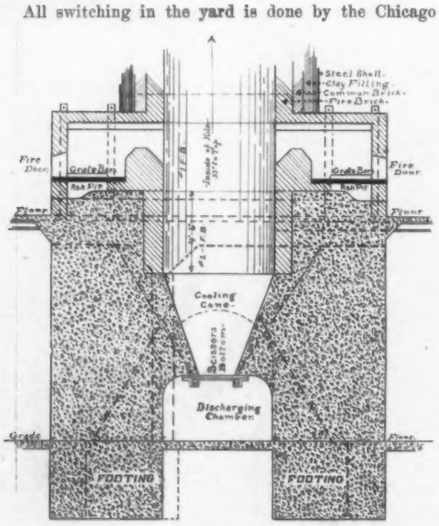
The cars in which the product is loaded for shipment are all under cover, so that the lime as taken from the kiln is immediately put into the cars; the tracks for which are lowered, bringing the floor of cars on a level with the concrete drawing floor.

One of the advantages of this plant is the economical way in which the coal is received and unloaded. A standard gauge inclined track was laid so as to pass through the building above the firing floor at an elevation of 5'. The coal is then unloaded on the firing floor ready for use. This track also extends through the building to a 60' bin having a capacity of 350 tons, in which any surplus coal can be stored for emergency use in case of poor delivery or coal strikes.

The entire plant is equipped with fire hose and fire pump, run by air pressure which can be started and under full headway in three minutes. This may seem unnecessary in a fireproof building, but it is best to use all precautions obtainable on account of the freight cars, also on account of the amount of coal on the firing floor, and bins which might become ignited through spontaneous combustion.

The water in the pump hole in the quarry is taken care of by a 4" centrifugal pump run by a 15-horsepower independent motor connected with an automatic circuit-breaker.

All switching in the yard is done by the Chicago and Joliet Electric Railroad, who deliver the cars to the Chicago and Indiana Western Railroad at McCook, Ill., from which they are forwarded to their destination.



CROSS SECTION OF KILN CONSTRUCTION.

These kilns produce on an average 140 barrels of lime in twenty-four hours and consume four tons of bituminous coal in the same time. The cost of fuel for producing lime is .067 per barrel or 67 cents per ton.

The accompanying illustrations will give some idea of the completeness of the construction of this plant, which although not an extensive one, has been built with such careful consideration of the minutest details that it will compare very favorably with the more pretentious ones.

Besides the lime plant herein described the company operates an extensive rock crushing business from the same quarry. The crusher plant is really a separate unit, and may well be the subject of another article later on. It is equipped with Austin rock crushers, and screens, and is electrically driven, and when completely balanced is designed to produce 1,000 yards of crushed rock per day, although at the present time running much lighter than that.

Both the lime and rock outfit of this plant is well taken care of by the channels of consumption controlled by the owners.

The Lime House of Owens.

OWENS, OHIO, Aug. 18.—A ROCK PRODUCTS man was fortunate enough to find both John D. Owens and his son, Clifford H. Owens, at their mammoth lime-producing plant here. Mr. Owens, Sr., is the pioneer lime man of north central Ohio, having succeeded to the splendid business built up by his father many years ago. In fact he was born on the extensive properties now operated as a lime plant. Years ago he invented an important improvement in the application of coal fuel to the old-fashioned lime kiln, which served its day with great efficiency. Clifford H. Owens, the son, is an energetic young man, and following his father's good example, has joined him in the lime business. He is a mechanical engineer of the highest type, not only theoretically educated, but eminently practical in the application of the same. Both members of the firm being progressive in the same line, it is little wonder that they have a most magnificent and efficient plant. Both the power house and the kiln house, as well as the barn, three immense buildings, are constructed of cement blocks, which were manufactured in another branch of their operations. Several years ago a producer gas outfit was installed in the new plant, and it has proved very satisfactory from every standpoint, that is, the yield has been increased, and if any difference, the quality of the lime improved. Quality lime has always been a motto of the Owens establishment from its inception, which is well recognized by their customers, and sure to continue as the fixed policy of the house of Owens.

Successful Kansas Concern.

The Moline Lime, Stone and Cement Company, of Moline, Kan., was incorporated under the laws of Ohio two years ago. Its officers are H. Ackerman, president; S. P. Lippincott, vice president; W. B. Everett, treasurer, and J. W. Thew, secretary. All of these gentlemen are residents of Marion, and are favorably known throughout the state of Ohio. E. D. Ressler, the general manager, is a resident of Moline, Kan. The company is capitalized for $50,000. Practically Marion, Ohio, capital controls the interests of the company.

The company's plant is near Moline and on the Santa Fe Railroad, giving it exceptional shipping facilities. It owns forty acres of quarry land, which contain stone of the very highest grade and quality for producing lime and cement.

The plant consists of four lime kilns and two crushers, whose capacity is from fourteen to sixteen carloads of crushed rock a day, the entire output being taken by Kansas and Oklahoma. The lime kilns produce on an average 250 bushels of lime each a day.

Preparations are now in progress to install electric drills and electric lighting, and when completed will probably double the capacity of its present output. The prospects of the company are very bright for producing lime and cement of a very high quality with an output that will supply the demand, which is fast extending beyond the borders of the two states where it is now placed.

Lime Kiln Men Lose Strike.

FOND DU LAC, WIS., Aug. 4.—The strike of 250 workers at two lime kilns in Marblehead and one in Hamilton was settled today, the men returning to work at the old scale, $1.60 a day.

SAND-LIME BRICK

The Jackson Pressed Brick Company.

The plant of The Jackson Pressed Brick Company is located three miles south of Jackson, Mich., on the Cincinnati Northern railway. The plant is operated by L. S. Anderson. It has a capacity of 16,000 brick per day and it operates on the silo system. The lime used is from the Mitchell Lime Company, Mitchell, Ind. The sand lies in a hill back of the plant which can be seen in the picture. It has been found that the most economical means of conveying the sand from the bank to the plant is by means of wagons. After it is delivered to the plant it is elevated and screened and then put into a silo. Here it is allowed to mix with the lime for ten hours, after which the material is conveyed to the press and the brick are then put into the hardening cylinders. A large stock is carried on hand and the plant has been operating continuously this year. The output of the plant is sold by the Bartlett Company, who are the exclusive sales agents for the product.

Sand Lime Brick Popular.

The Hummelstown Brownstone Company, Harrisburg, Pa., which operates a sand lime brick division in connection with their extensive cut stone quarries, report that the popularity of their sand lime brick is well established throughout the territory where they do business. They are making and selling 40,000 brick daily. The brick manufactured by this concern have a pink color, being manufactured from artificial sand, which is produced by grinding the spalls and

PLANT OF THE JACKSON PRESSED BRICK COMPANY, JACKSON, MICH.

quarry refuse in their brownstone quarries. The pieces cut from the very best stone that the quarries supply thus become the material from which the brick, which is a side line of their operations, is manufactured.

The brick are several shades lighter than the natural stone in color, but it is a lively and pleasing shade, which gives it the same kind of a popularity that a fancy brick would have in any market where people of highly developed taste are looking for a building material out of the ordinary. These brick at the same time have all of the high qualities of the usual sand lime brick.

Increase Capital Stock.

PHILADELPHIA, PA., Aug. 16.—At a special meeting of the stockholders of the International Sand, Lime, Brick and Machinery Company recently the capital stock was increased from $100,000 to $250,000. Most of the new stock has been subscribed for in Philadelphia.

Fire Destroys Sand Lime Brick Plant.

FREMONT, NEB., Aug. 10.—Fire gutted the plant of the Fremont Brick Company, causing a loss of $18,000, with only $3,000 insurance. The plant was located southeast of the city and could not be reached by the hose lines. The flames probably started from sparks from a switch engine.

The company moved to Fremont from Hastings a year ago when Fremont parties took $15,000 of the stock. This spring a granite brick building was constructed over a wooden frame. The blow is a heavy one for the company, but the plant will be rebuilt.

Plant Destroyed By Fire.

OWENSBORO, KY., Aug. 12.—Fire, which is supposed to have originated from an electric wire, destroyed the plant of the Owensboro Sand, Lime and Brick Company at 4 o'clock this morning. The fire originated in the oil room of the plant. The amount of the losses will be over $35,000, with only $20,000 insurance.

SAND AND GRAVEL

Washed Sand and Gravel for Concrete or Mortar Uses.

BY COLBY M. AVERY, C. E.

We are making such rapid strides in building and bridge construction, and general engineering work that it has brought out many new methods of preparing and testing the ingredients entering into its construction.

Now the leading architects, engineers and contractors are demanding pure, clean, washed materials, free from dust, loam clay and dirt, in their specifications. The reason for this cleaning is that where stones or gravel coated with dirt of any kind is used, the cement cannot reach the stone, but is allowed to set up against this film of foreign matter, which serves only as a form for the cement, and when set up it will have only the strength of the cement without its being thoroughly fastened or united with the sand and stone or gravel. Where washed sand and gravel is used the cement coats the clean surface of the material used in the concrete during the dry mixing, and then, when wet, the cement fills every void or cavity, both in the gravel used and the spaces between the sand and the gravel. A good illustration of this is cited in the history of a large contract for a concrete building erected in New Brunswick, in an extract from a paper read before the National Association of Cement Users at its convention, held in Milwaukee, in January, 1906, by E. S. Larned, C. E., of Boston, Mass.:

It is gratifying to note the growing appreciation of the important part sand plays in all cement work; in very many instances poor results are directly chargeable to the sand used. No cement will improve properly if mixed with very fine sand and results will vary with the characteristics of the fine material. It must also be kept in mind that an intimate mixture of cement and fine sand is very difficult to attain, and a thorough distribution of cement throughout the sand voids is absolutely essential to good results. Sand that looks good is not always above suspicion. The following instance will serve to show the importance of testing the sand before use: An important hydraulic work was begun last spring in New Brunswick, and the contractors and engineers had congratulated themselves upon having what appeared to be an ideal deposit of sand and gravel for concrete work. The cement was thoroughly tested with standard sand, with good results. When everything was ready an active start was made and considerable concrete was placed before any doubts arose; it would not set up, however, in a week's time (or longer, as it proved), and the cement was immediately tested again, with favorable results, and then some of the sand was examined. On the washing test it was noticed that a slight opalescence was imparted to the water, remaining in suspension several days, but leaving practically no deposit or sedimentation. The cement was then tested with this sand before and after washing, and the trouble was at once located. The sand and gravel were both washed thereafter, and good results followed.

Also from a paper by Sanford E. Thompson, M. Am. Soc. C. E., Newton Highlands, Mass.

Comparative tests indicate that different stones for concrete in order of their value are as follows: (1) Trap, (2) granite, (3) gravel, (4) marble, (5) limestone, (6) slag, (7) sandstone, (8) slate, (9) shale, (10) cinders. The hardness of the stone grows in importance with the age of concrete. Thus gravel concrete, because of the rounded surface, at the age of one month may be weaker than a concrete which is made with comparatively soft broken stone, but at the age of one year it may surpass in strength the broken stone concrete, because, as the cement becomes hard there is greater tendency for the stones themselves to shear through and the hardness and smoothness of the gravel stones thus comes into play.

There are instances where concrete structures have failed by the using of dust-covered sand and gravel. In one instance a pier was built where a loamy sand was used, it being the only available sand, and after a week's test the concrete was like putty and would not set harder. This work had to be replaced with clean washed sand and washed gravel. Sand and gravel, when pumped or dredged from the bottoms of rivers and lakes, is not fit for use without first being washed by a process that will roll and tumble it in fresh, circulating water, as the particles are often coated with slime and dirt that will stay with it unless passed through a washer.

The best principle for a washing plant is one that will roll and tumble the sand and gravel in the presence of a rapid running stream of water, which will also size the gravel and allow the oversize pebbles to fall into a crusher which will redeliver its product to the first washing screen, thereby saving and washing all the product of the bank. The successive steps of screens will make any number of sizes, and the fine sand can be taken out of the coarse by the process, and also will be settled into receiving tanks, from which the clay and dirt has passed off in a solution with the water, leaving the sand to settle as noted above. This method allows the contractor to purchase material that is of exact sizes that have been specified by the architect or designing engineer, and he is enabled to get both coarse and fine sand to fill any specifications that may be demanded.

New Sand and Gravel Plant.

BOISE CITY, IDA., July 30.—The Idaho Crushed Stone and Gravel Company, which has installed a large plant near the Ninth Street bridge, recently started operations.

The men at the head of the concern are Elias Marsters, E. W. Yeomans and Andrew Johnson. All the machinery has been set up and is in operation. The equipment consists of a combination screen, crusher and dredge. The dredge is operated by a 60-horsepower steam engine, the crusher by a 15-horsepower motor and a 5-horsepower motor runs the screen.

Gravel and stone is taken from the bed of the river by the dredge and run through the screen which separates the sand from the gravel and divides the latter into different sizes. The larger stones are fed into the crusher automatically where they are broken into any desirable size for use on roads or in building operations.

The plant is located on the Julia Davis park tract and all the refuse is to be utilized in reinforcing the bank of the river along the park front. Already a great demand has sprung up among concrete men and builders for the screened gravel and it is expected much of the output of the plant will be sold for use on roads.

Sand For Building.

RIDGWAY, PA., July 23.—Peter and Joseph Steis, of Boot Jack, Pa., are producing quantities of sand from the farm of Peter Steis.

The sand is pounded out of the soft sandstone which is found in large quantities at the quarry and, being thus reduced from the actual rock, is absolutely pure. Much of this sand is used in local building in Ridgway.

Sand Company Prospering.

SEBRING, OHIO, July 23.—Ed Oliver is in Warwick looking after the interests of the Silica Sand Company, of which he is manager. He states the company is now shipping about 800 tons of sand per week and is being run to the full capacity of the plant. The sand is made from crushed sandstone and then dried.

Sand Plant Burns.

ROXBURY, CONN., Aug. 13.—The entire plant of the New England Quartz Company, of this place, was destroyed by fire. The loss is about $150,000. The fire is believed to have started in the engine room.

New Gravel Company Formed.

COLUMBUS, TEX., Aug. 8.—Robert Strieker, of Brenham; W. S. Miller, of Columbus; D. E. Teague, of Brenham, and J. V. Franka, of Columbus, have secured a charter and have formed a corporation to be known as the Colorado Gravel Company, with offices at Columbus and Houston.

The capital stock is $20,000, full paid. The company will sell gravel and will act as manufacturers' agent for brick, window frames and general builders' supplies.

New Sand and Gravel Company Incorporated.

The Cairo Sand & Gravel Company has been incorporated at Cairo, Ill., to deal in sand, gravel and building materials, capital stock $5,000, by Daniel Hartman, Thomas J. Kerth and Calvin V. Neff.

The Page-Reighard Mining Company has located a valuable vein of fireclay at Mineral Point, Pa., and will erect a fire-brick plant there in the near future.

The Catskill (N. Y.) Vitrified Brick Company are turning out 50,000 pavers a day. They recently secured a contract for 3,000,000 brick for the city of Kingston, N. Y.

Luther T. Cisler, Marietta, Ohio, recently won the contract for the paving of over a mile of roadway near that city, the price being $15,480. The road will be 16′ wide and laid on a foundation of rolled stone or gravel.

A paving brick plant is to be established in Kirksville, Mo., by Daniel Kent, Edward Reed and Frank Eggert.

Walter Colyer, Albion, Ill., and L. L. Emerson, Mount Vernon, Ill., will establish a brick plant in Albion, Ill. The new company is capitalized at $150,000 and the new plant will have a capacity of 60,000 paving brick daily.

CLAY

The Clay-Working Industries.

The United States Geographical Survey has just published a large chart showing the statistics of the clay-working industries in 1908 by states and products, with comparative totals for 1907. This chart shows that the clay products of the United States in 1908 were valued at $153,197,762, compared with $158,942,369 in 1907, a decrease of about one-sixth. Every state and territory except Alaska is represented in this total, a fact which shows the widespread character of the clay-working industries. Ohio is the leading clay-working state, reporting products worth $26,622,490, or 19.99 per cent of the total. Pennsylvania, New Jersey, Illinois, New York, Indiana, Missouri, California, Iowa and West Virginia are the next largest producing states, in the order named. These ten states produced wares valued at $98,494,107, or nearly three-fourths of the value for the whole country. The first five states produced considerably over one-half of the total output. Wyoming has the smallest production, with products valued at $52,282, or only 0.04 per cent of the total.

Every state reported common brick, the total quantity being 7,811,046,000, valued at $44,765,614; this represents over one-third of the value of all clay products. Illinois is the leading producer of common brick, reporting 1,119,224,000, valued at $4,834,652, or $4.32 per thousand. New York is the second in quantity but first in value, the figures being 1,055,006,000, valued at $5,066,084, or $4.80 per thousand. The average value per thousand ranged from $3.97 in Kansas to $10.33 in Wyoming, with a general average of $5.73. Tennessee comes the nearest to the general average—$5.72. The average value in 1907 was $6 for the whole country.

There was a decrease in the value of the common brick from 1907 of $14,079,847, or 23.85 per cent, and the quantity decreased 1,984,652,000, or 20.26 per cent. The only states showing increases in output of common brick were Arizona, Idaho, Nevada, Montana, Oregon, South Dakota, and Washington, and of these states Washington showed a decrease in value.

Vitrified paving brick is one of the only two products that showed an increase in 1908. This product increased from 876,245,000 in 1907 to 978,122,000 in 1908, a gain of 11.63 per cent; and in value from $9,654,282 in 1907 to $10,657,475 in 1908, a gain of 10.39 per cent. Ohio is the leading state for vitrified paving brick, reporting about one-third of the entire quantity and value.

Drain tile is the other product that reported a gain in 1908, the increase being from $6,864,162 in 1907 to $8,661,476 in 1908, or 26.18 per cent. This product finds its largest use in the Middle West—Iowa, Indiana, Ohio, Illinois, and Michigan reporting 89.84 per cent of the total.

Fire brick was reported in 1908 to the value of $10,696,216, compared with $14,946,045 in 1907, a decrease of 28.43 per cent. The quantity decreased from 783, 01?,000 in 1907 to 552,366,000 in 1908, a loss of 29.46 per cent.

Pottery products decreased in value from $30,143,474 in 1907 to $25,135,555, a loss of 16.61 per cent. The value of the pottery products was nearly one-fifth of the value of all clay products.

Copies of this chart may be had by addressing the director, United States Geological Survey, Washington, D. C.

The Virginia Fire Clay Manufacturing Company has been incorporated at New Cumberland, W. Va., with a capital stock of $50,000, by N. W. Ballantyne, C. A. Ballantyne, Lucie B. Ballantyne, Ola M. Brown and E. W. Brown, all of New Cumberland.

The Farmers' Coöperative Clay Works has been incorporated at Augusta, N. Y., with a capital stock of $40,000, by R. S. Ruzzell and S. W. Pike.

The Empire Brick Company has been incorporated at Olean, N. Y., with a capital stock of $150,000, by Henry Hasbrouck, F. L. Bartlett, H. S. Sartwell, all of Olean, N. Y.

The Murphysboro (Ill.) Paving Brick Company won the contract with their "Egyptian" block for extensive paving at Carbondale. These blocks showed a loss of only 11 72/100 per cent in the rattler.

Future Outlook Bright.

MARION, IND., Aug. 16.—The Marion Brick Company is having the best business now that it has had for more than a year, according to Frank Cole, manager of the plant. The company is now shipping four or five carloads of bricks every day and the prospects for business are better than for a number of months past.

Punxsutawney Brick Plant Burned.

PUNXSUTAWNEY, PA., Aug. 17.—The plant of the West End brick works was practically destroyed by fire. The loss is $10,000, with no insurance. The brick works, formerly the old Rogers plant, was purchased a year ago by the present company, and $13,000 worth of improvements recently had been completed. Brick buildings will be erected on the site.

Will Rebuild Brick Plant.

RIDGEWAY, PA., Aug. 6.—The Hayes Run First Brick plant, which was destroyed by fire near Farrandville, Clinton county, last week, will be rebuilt and work on the new structure will begin just as soon as General Manager Keller shall have made a visit to a number of modern plants in this and adjoining states. It is the purpose of the company to make the new plant one of the best equipped and most modern in the state and to this end no expense will be spared.

A Million Dollar Merger.

SPOKANE, WASH., Aug 3.—Consolidating their interests in a $1,000,000 deal, the Washington Brick, Lime and Manufacturing Company and the Spokane Sewer Pipe Company have formed a new corporation under the name of the Washington Brick, Lime and Sewer Pipe Company. The new corporation will take over all the plants and other property of the first-named company and will also carry out the plans of the sewer pipe company to erect a $300,000 sewer pipe plant adjoining the east city limits of Spokane. Joseph H. Spear, president of the Washington Brick, Lime and Manufacturing Company, will be the president and manager of the consolidated companies. The new company will have a capital of $2,000,000, half preferred and half common.

Brick and Tile Company Organized.

LEXINGTON, TEX., Aug. 17.—The Lexington Brick and Tile Company has been organized here, capital $7,500. Stock was all taken and charter applied for. All subscribed by local capital. It is to be a stiff mud plant, 20,000 building brick daily.

The following are directors: G. P. Dickson, R. F. McGinty, E. Zander, H. Englehart, Will Fricke, G. P. Dickson, president; R. F. McGinty, secretary and treasurer.

Brick Company Make Repairs.

POUGHKEEPSIE, N. Y., Aug. 16.—The Rose Brick Company are to expend $60,000 in improving their plant at Roseton, near Milton. Among the changes proposed will be the installation of an electric carrier system for the transportation of clay from the banks to the yard, doing away with the old-fashioned dump carts. This will also be a protection against the periodical strikes that generally start among the drivers.

Will Erect Modern Brick Plant.

ALBUQUERQUE, N. M., Aug. 16.—The Deming Brick and Building Supply Company is a newly incorporated outfit with headquarters here which will begin work at once on the installation of a modern brick plant.

The Century Post Mold Company is manufacturing post molds for making reinforced concrete fence posts. It is doing a lively business in Fostoria, Ohio, their home town. The farmers seem to have taken very kindly to these molds and are commencing to use them extensively on their farms.

The Bartlett Company, of Jackson, Mich., are meeting with great success in placing their "Art White" cement. They state that it makes an attractive white stone, artistic, ornamental, decorative, pleasing in appearance and profitable to the user. It costs but little, they say, and that it will pay to investigate. They ask $1.50 for a 95-pound sack, $5 for a 380-pound barrel. The Bartlett Company are well and favorably known. Their "Art White" cement is attracting considerable attention, and contractors and builders, so we are told, are charmed with it. Full particulars furnished upon request.

Side Talk

Austin Suspended Shaft.

The users are appreciative of the suspension bearings which the Austin Manufacturing Company have lately added as an improvement to their gyratory crusher. The company states that this provides a construction in which the main shaft is supported in such manner that its weight is carried upon bearing surfaces formed concentrically with the axis of gyration and oscillation of the main shaft and located as near the centre of such oscillation as the external diameter of the main shaft will permit. The relative movement of one bearing surface upon the other is reduced to a minimum and the bearing surfaces are at all times in full-faced contact with each other. The company states that they will continue to furnish their gyratory crusher with either a supported or a suspended shaft. By addressing the firm at 314 Dearborn Street, Chicago, any further information desired will be gladly furnished.

Mortar Colors and Oxides

It is a well-known fact that practically all of the oxides of iron have a staining or coloring value. However, what is not so well known is, that while some of these oxides are permanent under ordinary weather conditions, others of exactly the same shade and staining power, are very unstable chemically, and will readily change in chemical composition, color and solubility. These unstable oxides are very hard to separate, but if the mortar color contains the least trace of them, it is sure to crock and fade. The Ricketson Mineral Paint Works, of Milwaukee, have a special process whereby they remove all but the absolutely stable oxides from their "Red Brick" brand mortar colors. The Red Brick brand colors may be had in red, brown, buff, purple and black and are said to be absolutely reliable for coloring mortar, cement, clay and sand lime brick.

Westinghouse Apparatus in Portland Cement Mill.

The new power plant of the Southwestern Portland Cement Company, El Paso, Tex., will contain two 600-kilowatt Westinghouse steam turbines driving 750-kilovolt-ampere, Westinghouse revolving-field alternators, delivering 60-cycle, 3-phase current at 440 volts. Excitation current is furnished by a 55-kilowatt, 125-volt Westinghouse engine-driven generator, and by a motor-generator set comprising 55-kilowatt and 20-kilowatt direct-current generators driven by a 115-horsepower type CCL induction motor. The turbines exhaust into Westinghouse LeBlanc condensers, which maintain a vacuum of 28 inches. The motor equipment of the mill, also Westinghouse apparatus, comprises a number of type CCL three-phase 440-volt induction motors of both vertical and horizontal types and ranging over 100, 75, 50, 30, 20, 15, 10 and 5-horsepower capacities, besides a 35-horsepower HF motor, and 1 to 5-horsepower SA variable-speed motors. All motors were furnished complete with starting apparatus, by the Westinghouse company. The power plant of the Southwestern Portland Cement Company applies lighting service in addition to operating the cement mill.

The Sandusky Portland Cement Company, Sandusky, Ohio, wrote us under date of July 26 that they have supplied their Waterproof Compound for the following important work:

Harwood Electric Power Plant, Harwood, Pa.
Van Heynigen Residence, Mobile, Ala.
Napa State Hospital, Napa, Cal.
State Normal School, San Jose, Cal.
Point Building, Cleveland, Ohio.

Their Medusa White Portland Cement has also been used on the following work:

University Building, Evanston, Ill.
First National Bank Building, San Francisco, Cal.
Whitney Building, San Francisco, Cal.
High School, Everett, Wash.

Specified by the following architects in England: James Hartley, and Runton & Barry.

For imitation terra cotta trimmings on Tremo Hotel, Spokane, Wash.

For exterior cement finish, dormitory for Pomona College, Claremont, Cal.

Merit will tell. Business never seems to be slack with the Sandusky Portland Cement Company.

A book on blast hole drilling with well drills is being compiled by the Keystone Driller Company, of Beaver Falls, Pa., to be published in connection with the 1909 edition of catalog No. 4. The editor will be glad to receive from any source drilling records and general information on the subject to be embodied in the text. The book will be distributed freely among reputable engineers and contractors.

The Department of Water Supply of the City of New York has been supplied with three 1,500-foot portable drilling machines by this company. The machines are to be used for putting down wells on Long Island for the water supply of the Borough of Brooklyn. The rigs are the same as the regular No. 15 Oil Rig, except that the boiler, which is mounted on a separate truck and located at a distance for oil and gas drilling, is in this case mounted on the machine.

They have made shipment of seven large Double Stroke Geared Deep Well Pumps, for the town of Zacatecas, Mexico. The pumps are part of a million dollar water supply plant for the city, which is being installed by the government of Mexico. The city of Napanee, Ind., has doubled the capacity of its water supply plant by the installation of a second Double Stroke Geared Pump manufactured and installed by this concern, who also had contract for boring the well in which the pump was hung. One large Double Stroke Geared Pump and two Single Stroke Geared Pumps are being installed at the plant of the United Ice and Coal Company, Harrisburg, Pa. The water obtained is to be used in the manufacturing of ice. It has been found that artesian water is more pure than the city supply. But the greatest saving is effected in the cooling of the water. The artesian supply can be frozen at a cost of about 30 per cent less than the city water.

"Gas Producers and Gas Firing and the Advantages of Gas Firing over the Direct Use of Coal" is a work by Ernest Schmatolla, 150 Nassau Street, New York City. This is a publication of great importance. It was first printed in German and attracted wide attention. Mr. Schmatolla, who is recognized as one of the ablest metallurgical and chemical engineers, is a specialist in gas firing. He is now issuing this in an abridged form, pamphlet size. The public is to be congratulated on being able to procure this valuable information in such a concise manner. The *Mining Journal*, London, England, printed it in full only a few months ago and are placing it on the market for ten shillings, net.

Mr. Schmatolla also has in pamphlet form the lecture given by him before the English Ceramic Society on "Gas Firing." These pamphlets are remarkable for the clearness of expression, and the conciseness and force in which the facts are presented.

If you could get a stone crusher which, besides being a very rapid and efficient crusher, would also do the work of a stamp mill and of crushing rolls could you utilize it? The Eureka Stone and Ore Crusher Company, of Cedar Rapids, Iowa, state their Eureka crusher is such a machine and that they stand ready to prove it by verified records of actual users or by installing one and letting you work it for thirty days. The trial will not cost you a penny if the machine fails to do what they claim for it. They say that the Eureka crusher resembles the common jaw crusher in appearance but in appearance only; that it possesses an entirely different and distinct principle of action. It can, moreover, be adjusted by a simple twist of a set wheel to crush rock or ore to 6-inch fragments or to powder fineness or to any size between power and 6 inches. Notwithstanding its wide range of work the Eureka crusher is as simple, light and compact as any stone crusher on the market and it costs as little as any well built stone crusher can cost. Being well built and of few simple parts its repair costs are very small. The Eureka crusher is not an untried machine—first one was built in 1902—over 10,000 have been installed in Germany, South Africa, Norway, Sweden, Italy, and all English possessions, and are in use by foreign mining engineers, quarry men, and contractors for road work, concrete work and ballasting.

They urge you to investigate the Eureka crusher, whatever the character of the material is that you have to crush or whatever kind of crushing you have to do they invite comparison between the Eureka crusher and the kind of machine that you are now using for doing the work.

Give them specifications and then they will tell you the exact size machine that will meet your requirements. State clearly what kind of rock or ore, also the exact amount of tons (2,000 pounds to ton) in ten hours that you wish crushed. Also state the size in width, or fineness in mesh to which said materials are to be reduced and for what purposes. They request that you write them at once.

FROM OUR OWN CORRESPONDENTS

CHICAGO, ILL.

CHICAGO, ILL., Aug. 20.—Trade is good among the local Portland cement manufacturers. The demand has shown a constant, steady increase since the first of the year, and now sales are active and numerous. Construction has been large all during 1909 and no enterprise of any magnitude has been undertaken without some cement being used. Each month has shown a gain over the preceding one, and although the old complaint that prices are not what they should be is heard from everyone, it is said with a smiling countenance. Even if the profit is small, as long as there is a profit and the demand is sufficiently large, good cheer will prevail. Chicago is a great city, a great center, and its wants are increasing so rapidly each year that the total now is simply enormous.

M. J. Williams, of the Williams Patent Pulverizer Company, has the following to say: "We had a very large business throughout the fall season, but judging from present conditions, prosperity has apparently returned to all classes of business, and I expect a marked increase in the volume of orders all over the country."

F. N. Wilson, in speaking for the Marsh Company, said: "The general tone of the rock crushing machinery market is becoming better right along.

"We cannot complain in the least of the volume of orders that have been received throughout the year. It is interesting to note that the concrete block machines have been in very large demand for some time. The majority of companies that use these machines have obtained very satisfactory results in the manufacture of blocks from screenings; as it is usually a difficult matter for rock crushing plants to dispose of screenings, it will be easily seen that this type of machinery is thoroughly advantageous to manufacturers."

Among the new devices that the Marsh Company is placing on the market at the present time is their machine for the manufacture of concrete posts. An appreciable number of these machines have already been sold.

The Marquette Cement Manufacturing Company is now shipping cement for a large contract for a dam at Ladysmith, Wis., and also for the erection of a paper mill at Wausau, Wis. The former enterprise will take about 30,000 barrels, while the paper mill contract calls for approximately 25,000 barrels. The company is also making regular shipments for the construction of the Grand Avenue viaduct at Milwaukee, Wis.

Gold Williams, of the Marquette concern, said of general conditions: "While prices at the present time are somewhat lower than they were a year ago, there is a noticeable increase. The volume of orders is undoubtedly better than it was during August of last year."

James A. Hart, president of the Chicago Gravel Company, regards the outlook for the future of the sand and gravel business with optimism. He said: "Business with us will increase steadily, as it has ever since our concern was organized. This statement can hardly be questioned. I believe the general use of sand and gravel in building of highways, for railroad ballast and in concrete construction is steadily increasing."

The German-American Portland Cement Company is operating its mills both night and day and is getting its full proportion of business. E. L. Cox, sales manager, had the following to say: "I find that general conditions are improving steadily. Orders are coming in satisfactorily for this time of the year, and prices are showing an upward tendency."

J. P. Beck, of the Universal Portland Cement Company, holds an encouraging view of the situation. "At this time of the year," he said, "there is usually a large general demand for cement. Throughout the summer business had been brisk and active and at the present time the majority of manufacturers are all behind on shipments. I anticipate a steady increase in trade for some time to come. Prices are just now stiffening up and will probably show improvement during the next few months.

The Universal Portland Cement Company delivered 80,240 barrels of cement by team from their warehouses in Chicago alone during the month of July. If all the sacks of our cement delivered by team in the city of Chicago during July, 1909, were laid end to end, the line would reach from Chicago to Milwaukee, Wis., and nearly half of the way back again."

Thomas Moulding, in speaking for the concern that bears his name, had the following to say: "Business at present is practically the same since the first part of July, and I have expectations of a good increase throughout the entire fall season. Conditions at present are decidedly improving."

Reports from the George W. DeSmet establishment are encouraging. A representative of the concern said: "The cement market seems to be improving right along, together with the stiffening of all prices. Business is considerably better than it was a year ago and I judge from the fact that the mills are resuming that prices will be remarkably better next year. Prosperous conditions are returning to nearly all classes of business, and the cement industry is by no means the last to fall in the ranks.

"The waterproofing business is active both in Chicago and the rest of our territory. We have secured several large contracts lately, among them the furnishing of waterproofing for the foundation for the new Chicago and Northwestern terminal station."

G. H. Putney, of the Lake Shore Sand Company, reports his concern as operating to capacity at the present time. "Business is better this month," he says, "than it was a year ago. We have increased the capacity of our new plant to seventy-five cars a day."

"Business at the present time is increasing wonderfully," said E. A. Mollan, of the Sandusky Portland Cement Company, "and this is rather remarkable when the fact is taken into consideration that a number of internal troubles, such as the 'tariff question,' have curtailed transactions to a large extent."

C. B. Shefler, president of the Garden City Sand Company, said: "Business at the present time is very good, indeed, and we have no complaint to make whatever; in fact there has been a vast improvement over last year. We can hardly keep pace with the volume of orders received. Just now there is some room for improvement in the matter of prices, but a natural betterment in this respect is expected within a short time."

J. Hodgkins, of the Brownell Improvement Company, reports conditions in all classes of business at the present time as improving. "We are selling all the stone that we can quarry and at fairly satisfactory prices. Practically all of the trouble that we have experienced has been the shortage of labor on track elevation work. I hope the present improvement will continue for some time to come."

J. U. C. McDaniel, of the Chicago Portland Cement Company, reports conditions as being favorable to the cement business. He said: "The demand for cement just now is very heavy; more, in fact, than it was at this time last year. I expect that September will be a banner month, as the volume of our orders is constantly increasing, and I have little doubt that October will be likewise."

N. C. Fisher, president of the American Sand & Gravel Company, reports a very satisfactory volume of business at present. There has been an increase in the number of orders received so far this year over last year. The most sales are of gravel.

"Prospects for future business are very good and I believe there will be a steadily increasing demand right along. We are furnishing all gravel in the concrete on the new Borland Building on Federal Street."

J. F. Brassil, of the Union Stone Company, had the following to say: "At the present time we are doing a much larger business than we were a year ago. Very nearly all stone companies are now running their plants to full capacity, and judging by the present indications, conditions will be good until the snow flies."

Charles J. E. Anderson, Chicago representative of the Indiana Gravel Company, said: "Business with us is very good at the present and has been steadily increasing. The volume of orders received compares favorably with those of last year. Prospects for the future are bright. Prices, while they do not seem to be as good this year as they were in 1908, are showing some improvement right along, and we are expecting them to reach a normal basis pretty soon."

H. M. Boice, of the Stearns Lime & Stone Company, had the following to say: "We are experiencing a rather moderate business at present, but can safely say that there has been an increase over a year ago. I would not care to make any statement regarding the future conditions, as I am a little uncertain concerning developments.

J. J. Pleas, vice president of the Chicago Union Lime Works Company, reports business conditions as having been strong and active for some time. "At present," he says, "we are running our plant to full capacity. I expect a steady, progressive business all through the season and believe that prices will show a tendency towards increasing during the fall months. The increase of street paving has naturally aided the crushed stone business. Lime business, however, has been somewhat slack, but has been no worse than is natural at this time of the year. Altogether I expect a very good demand for several months to come."

Charles J. Luck, treasurer of the Federal Stone Company, said: "Business with us is and has been improving, and at the present time is away ahead of the volume of trade transacted during the spring season of this year. Prices do not yield enough profit to warrant a trip to Europe, nevertheless there is enough money in the business to buy anyone a drink of pop and a pack of cigarettes."

KANSAS CITY.

KANSAS CITY, MO., Aug. 18.—In spite of the low price of cement, there is still about the same amount of hustling done to get orders, even though they may be filled at a loss, and there is no indication of any change in the present conditions. It is simply a matter of over-production bringing on the strife, and the cut in price is said to have had no effect in the way of stimulating sales. No more cement is moving today than there was before the cut began, the only change being the carrying of a larger stock by the wise dealers. They feel safe in loading up pretty strong now, and will maintain a better stock, so they can take care of all business and have cement on hand when the price does go up again. It is stated by some of the cement people that the dealer is making a big thing out of the cut-price war, and is selling cement at regular prices, while others claim that there is as much of a fight among the dealers as among the manufacturers, and that there is no more money made by them than they usually make with prices at the normal point.

The prices on other building material, lime, plaster, etc., continues to be steady and the demand is good—fully as good as though there were regular prices prevailing in the cement field. The home demand for all kinds of building material has been good and steady all through the year, and is expected to be even larger for the balance of the year. The demand from the outside territory is on the increase right now, and is expected to grow larger with great rapidity, for there is to be a big harvest this year in the Kansas City territory, and building operations naturally follow a big harvest in a country which depends upon the harvest almost entirely for its prosperity.

Here in the city at the present time there is a demand being made by both the plasterers and the lathers for higher wages. Only a few months ago there was a strike of hod carriers which succeeded in causing a raise of wages, and now it is to be expected that all the building trades will come forward with their hands out, asking for their share. The plasterers have been getting $5.50 per day and the foremen $6. They want the new schedule for workmen to be $6 and for foremen $7 per day. The lathers have been getting $3.50 and $4, and they ask for an increase to $4 and $4.50. In many instances these demands have been acceded to, temporarily, and what the future action may be is not known, but the chances seem to be good for their acceptance, so there will be nothing to stop construction work.

W. J. Stewart, manager of the Kansas City office of the Marblehead Lime Company, has just been sending out a little folder to the dealers of his territory, calling their attention to the fact that it is almost impossible to make quick delivery between September 1 and December 1, while it will be easy before that time, and attaches a reprint from the daily press, which quotes J. J. Hill as saying that the freight cars of the railroads would all be busy as soon as the tariff question was settled. The reminder is bringing in a nice lot of advance orders, and they are still able to make prompt shipment, but the railroads are already apparently finding a great deal more use for their cars than they did only a few weeks ago, and it is apparent that Mr. Hill was right, and that it will not be long before there will be a scramble for cars in all parts of the country, for there has been no new cars turned out for some time now, and the old ones have been going into the scrap pile.

Howard McCutcheon, president of the C. A. Brockett Lime & Cement Company, is building a new home at 20 West Fifty-third street, in the Country Club district. The house is of stucco construction and the design is an adaptation of the modern French architecture to the needs of the suburban home.

James L. Darnell, city engineer, is a strong advocate of the use of concrete in the bridges of the city. In a letter to the board of public works he suggests that in case an election is held soon to vote bonds,

that a provision be included for $250,000 for the construction of concrete bridges, and he names the places where these bridges should be established, as follows:

Bridge over Blue at Independence Avenue.
Bridge over Blue at Fifteenth Street.
Bridge over Brush Creek at Cleveland Avenue.
Bridge over Brush Creek at Woodland Avenue.
Bridge over Brush Creek at Troost Avenue.
Bridge over Brush Creek at Holmes Street.
Bridge over Brush Creek at Main Street.
Bridge over Brush Creek at Wornall Road.

"Besides these," Mr. Darnell says, "we have promised the residents and business men of Sheffield to build a bridge over the Blue at Independence Avenue, and in addition to this there are several culverts from fifteen to forty feet long which should be built at an early date."

Ira G. Hedrick, bridge engineer, is preparing plans for a reinforced concrete bridge to be constructed across the Blue River and the railroad tracks in Swope Park. The bridge will probably be built at what would be Sixty-fourth Street, and an east and west drive constructed, to connect the two sides of the park which are now divided by the river and railroads which run along its banks.

The contract for the construction of the new concrete bridge over Brush Creek on Prospect Avenue has been let to the Midland Bridge Company, for $10,176, and the bridge is to be finished in four months.

W. J. Stewart, western manager of the Marblehead Lime Company, says that every day makes more friends for the hydrated lime. Dealers who have held aloof from it, apparently under the impression that it was just one more building material added to the list to cause them to increase their stock and not increase their business, are beginning to realize that hydrated lime is going to be one of their best money-makers and grief-savers. In the past there has always been a small trade in lime which has been a nuisance, and has cost a great deal more than it was worth, at the same time the dealer was forced to take care of it. Five or ten cents' worth of lime must be sold, no matter if a fresh barrel must be opened, and then allowed to air-slake afterwards, and the opening process be gone through with out in the warehouse while the customer was left in the store alone, with the chance to fill his pockets with hundreds of things of greater value than the lime sold. The hydrated does away with all this trouble, for the dealer can open a sack of it and have it put up in paper bags, to sell at various prices, so the buyer of a small quantity of lime can be supplied in a moment and without any trip to the warehouse. The fact that air has no effect upon it after it has been hydrated, and that it has all the strength of the unslaked lime, and can be exposed to the air and kept on the shelves in paper sacks for this small trade, is a big point in its favor with the dealer, and he can buy it in mixed cars, along with the regular barrel lime, so his investment need not be increased and both kinds kept in stock all the time.

A. S. Merriett, of the Merriett Monolithic Company, Kansas City, Kas., announces that he has perfected moulds which are away ahead of those proposed by Mr. Edison for making concrete houses. His moulds do not make the entire house at once, but on the other hand a set of his moulds are good for the construction of various shaped houses.

The Uhrich Planing Mill Company, which has plants in both Atchison and Independence, Kan., is putting in a fine plant at the latter point, with sixty thousand square feet of floor space on one floor, and that floor is made of concrete.

The University of Missouri is establishing an engineering experiment station for the purpose of making official tests of all kinds of building material. Prof. H. B. Shaw, dean of the school of engineering, is at the head of this new department, and J. D. Brooks is assistant.

Wm. Strickler has taken out a permit for the erection of a concrete factory building at 2715 Indiana avenue, size 102x118.

Guy E. Smith, of Indianola, Ia., has the contract for the construction of $2,000 worth of vitrified pipe sewers in Hiawatha, Kan.

John Shultz is about to erect a cement block business building in Marysville, Mo., out of blocks manufactured by Chris. Kolb.

A. Ketcham, of Oklahoma City, Okla., is reported about ready to begin construction of a four-story concrete building at that point.

Stockholders of the Central National Bank, of Denver, Colo., are soon to begin the construction of a nine-story reinforced concrete office building at Fifteenth and Arapahoe in that city, to cost about $400,000.

The Citizens' Bank, of Pine Bluff, Ark., is soon to begin construction of a six-story office building, which is to be made of concrete, and cost about $175,000.

The Wurster Construction Company, of Wichita, Kan., has the contract for the erection of the Murphy Hotel in Hutchinson, Kan. It will be a reinforced concrete building of five stories and a basement.

A petition has been presented to the Board of Public Works by residents of the Sheffield district asking for a concrete or stone bridge across Gooseneck creek.

Bids are soon to be called for by the Metropolitan Street Railway Company for a reinforced concrete viaduct at Lydia Avenue and Second Street, to be 893 feet long.

Plans have been completed for a $30,000 family hotel building to be erected at Fifteenth and Locust by F. G. Altman. The steel contract has been let to the Kansas City Structural Steel Company.

Robert C. Barnett, an engineer of this city, is preparing plans and estimates for concrete culverts, etc., to be constructed in the park system in Memphis, Tenn.

C. C. Drew, of Tulsa, Okla., is beginning the erection of a five-story office building, to be made of reinforced concrete.

A reinforced concrete jail is about to be constructed in Globe, Ariz., and bids will be asked for.

Still & Trimble, of Emporia, Kan., have sold out their cement brick and block plant to Dave Cowan, and the plant will be continued under the management of Walter Rumsey. Still & Trimble will continue to do cement contracting.

Baker & O'Hara are putting up a cement block building in Grand Island, Neb., and when completed it will be used by them for a cement block factory.

The question is to be submitted to the people of Wyandotte County, Kansas, just across the line, of issuing bonds to amount of $500,000 for the erection of a court house.

The J. S. Worley Company, of this city, is preparing plans for a sewer system for Norton, Kan.

The Bethany Hospital Company, of Kansas City, Kan., is preparing plans for a new hospital to be erected on a five-acre site just purchased.

Keene & Simpson, of this city, have prepared plans for a $100,000 building for the Commercial Club, of Wichita, Kan. It will be of concrete and steel construction.

A permit has been issued for a reinforced concrete addition to the club house of the Knights of Columbus, at 3200 Main street.

Permission has been given the Burnap Stationery Company to erect a reinforced concrete business building, 56x140 feet, at 107-9 West Tenth Street.

The Missouri Pacific Railroad is clearing ground in Kansas City, Kan., for the construction of a depot which will be made of brick, stone and concrete, and is to cost $100,000.

J. L. Loose has ordered plans prepared for a $50,000 residence, to be made of brick, terra cotta and stone, and to be erected on the corner of Armour Boulevard and Walnut Street.

The Midland Bridge Company, of this city, has been awarded the contract for paving Third Street, in Sedalia, Mo., with brick.

H. W. Hoerath, of Junction City, Kan., has been granted the contract for the construction of 16,666 feet of concrete sidewalk, to be laid at Fort Riley. The price was 17½ cents per square foot.

A. H. Craney, vice-president of the Union Sand & Material Company, of St. Louis, operators of the Kansas City Portland Cement Company plant in Kansas City, has been paying the plant a visit during the past week.

E. Dickinson, vice-president of the Kansas City, Mexico & Orient Railroad, is about to begin the erection of a $50,000 residence in the Country Club district of this city. It will have an outside dimension of 39x107 feet, and will be constructed of red brick with white stone trimmings.

PHILADELPHIA.

PHILADELPHIA, PA., Aug. 16.—Notwithstanding the usual attenuated trading during the summer months, there has been a noticeable gain in cement quarters during this period, and now that the formidable tariff question has been disposed of, a continued expansion may be looked for. Orders are coming in more freely, with a stiffening of prices, and stock buying has begun to be an important feature. Lime, sand and in fact all building materials are benefiting by the improved conditions, and the wise business men are stocking up at prevailing prices, not to be caught napping in the rush, which is sure to come. Reports coming in from all large industrial institutions are strongly optimistic as to outlook and testify to a general return of confidence and a consequent livening up of business.

Among the new work on the boards:

A reinforced concrete arch bridge on the line of Sixty-second Street over the Philadelphia, Baltimore & Wilmington Railroad, granted to the Hennebique Construction Company.

Charles R. Knapp & Company have contract for a sanitary cow barn, of reinforced concrete, 34x70 feet, for Brae Burn Hospital, Primos, Pa., planned by Architect Oliver Randolph Parry. The same architect has plans for a large reinforced concrete bungalow, for the Bungalow Builders, to be erected for Mrs. Jeannette S. Merrick, also reinforced concrete residence for Walter E. Andrews, Wayne, Pa.

George W. Shisler is building twenty-five two-story brick dwellings on the site 2001 to 2049 South Twenty-second Street, to cost $51,000.

Hoopes & Townsend, who have purchased the large factory building at the southwest corner of Twelfth and Hamilton Streets, contemplate, it is reported, erecting on the site a ten or twelve-story building as an addition to their present plant at Thirteenth and Buttonwood Streets.

Architect E. Allen Wilson is receiving estimates on twenty-nine two-family dwellings at Fifty-fifth and Chestnut Streets, for Victor Eakin. The same architect is receiving estimates on three houses to be built at Hancock and Master Streets, for Mrs. Ellen A. Phipps, and on an automobile garage at Fifty-second and Sansom Streets, for Harvey Aungst.

J. W. & T. M. Zane will build sixteen three-story dwellings, each 16x55' 6", and four two-story stores and dwellings, each 16x55 feet, on Lehigh Avenue between Twenty-third and Twenty-fourth Streets, at a cost of $72,800.

William Steel & Sons Company is figuring on a powerhouse and stable for a manufacturing concern in Nicetown. Each building will be of reinforced concrete. The stable, which is L shaped, will be 31x79 and 39x113 feet. The powerhouse will be 37.1x48 feet.

The new machine shops now in course of erection in Scranton, by the Lackawanna Railroad, will cost approximately $1,000,000, of which the various buildings will cost $817,000 and the extra equipment the remainder. One building alone, 40 feet high and 344x583 feet in ground dimensions, will cost $700,000.

The Reading Railway has awarded contracts for the reinforcing and strengthening of fourteen bridges on the Perkiomen Valley Railroad. Contracts for the superstructures of three bridges were awarded to the Phœnix Iron Company, for nine bridges to the McClintock-Marshall Company, and for two bridges to the Keystone Structure Company. Contract for the substructures of all bridges was awarded to the John Kelly Company.

Calvin W. Rogers will build ten three-story houses, each 16 feet 4 inches by 58 feet, at the northeast and southeast corners of Fiftieth and Wanut Streets, and on the north and south sides of Walnut Street east of Fiftieth Street. The cost will be $50,000.

The William Steele & Sons Company has a contract to build a factory building covering almost half a square, at Twenty-third Street and Allegheny Avenue, for Wolstenholm & Clark.

Solomon Greenberg has sold to Robert G. McDougall the block of ground between Sixty-second and Sixty-third Streets and Media and Master Streets. The purchaser will erect 142 porch front dwellings, which will cost about $300,000.

Edwin S. Radley has taken title to a block of ground at Broad Street, Lindley and Duncannon Avenues and Fifteenth Street for an operation to cost about $500,000.

Philip S. Vollmer, Philadelphia representative of the Atlas Portland Cement Company, 1210 Fidelity Building, testifies to more healthy conditions. Some very desirable orders have been booked of late, at advanced prices, and he believes now there will be a sharp progress towards a bulging prosperity.

J. T. Wakeman, Philadelphia representative of the Edison Portland Cement Company, 613 A Arcade Building, says the company is getting business every day, therefore is not inclined to quarrel with conditions. He regards the outlook promising.

Henry Longcope, manager of the Alpha Portland Cement Company, 910 Harrison Building, speaks encouragingly of recent progress in trading. Orders are increasing, prices stiffening and the outlook is for enlarged business.

Charles Elmer Smith, superintendent of the Master Builders' Exchange, is kept busy these days. There is a constant stream of visitors to the exhibition department, informing themselves as to the most modern material and best methods in building. Indications, Mr. Smith says, are unmistakably for a steadily advancing prosperity. The exchange is continually adding new members to its roster.

The Holmesburg Granite Company, 112 North Broad Street, building granite and trap rock, is busy, consequently tranquil over conditions.

(Continued on Page 43.)

ALL THAT THE NAME IMPLIES

SECURITY

PORTLAND CEMENT.

"BETTER THAN OUR SPECIFICATIONS REQUIRE"
B. T FENDALL, City Eng, Baltimore.

"OUR TEST IS QUITE SEVERE. CONGRATULATE YOU ON THE EXCELLENT SHOWING MADE."
C. W. HENDRICK, Sewerage Com., Baltimore.

MARYLAND PORTLAND CEMENT CO.

Main Offices, 8th Floor, Equitable Bldg. BALTIMORE, MD.

WORKS: SECURITY, MD. (NEAR HAGERSTOWN)

"OK" QUALITY

"OK" Cement is ground 85% fine on the 200 mesh sieve — and contains 10% or 38 lbs. more actual cement than the coarser ground cements — OK Cement will carry one third more sand than other brands—It is the highest possible grade and guaranteed in every particular and to meet all requirements of the U. S. Army and American Society for Testing Materials.

Oklahoma Portland Cement Co.

Ada, Oklahoma

USE

UNIVERSAL PORTLAND CEMENT COMPANY
UNIVERSAL
PORTLAND CEMENT
CHICAGO-PITTSBURG

ANNUAL OUTPUT SIX MILLION BARRELS

Ottawa White Sand

FOR
- Ornamental Concrete Stone
- Cement Block Facing
- Hard Plaster Finishing
- Exterior Plastering
- Keene's Cement
- Laboratory and Testing
- Stone and Marble Sawing

IS THE STANDARD

99.87% PURE SILICA

LARGEST PLANT IN THE UNITED STATES

United States Silica Co.

American Trust Bldg., CHICAGO, ILL.

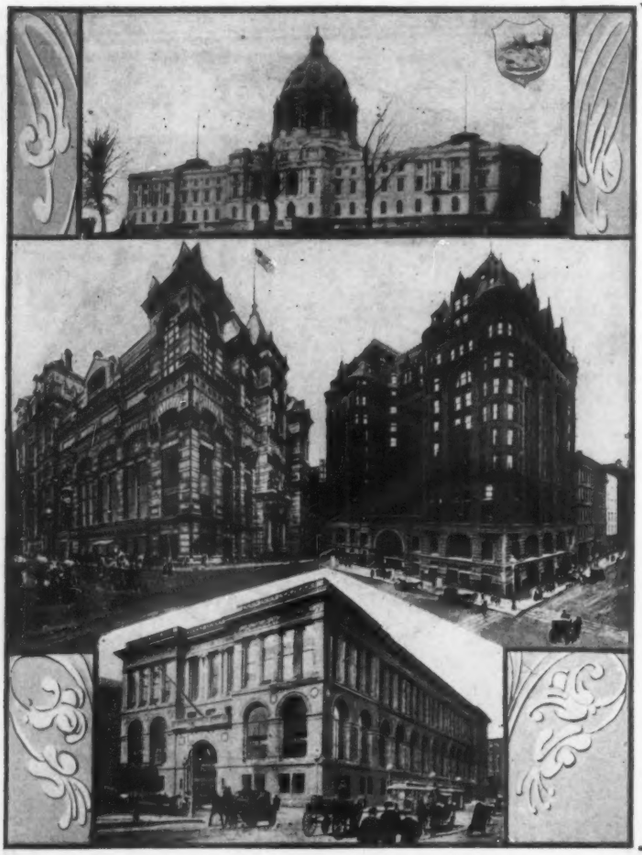
The BATES VALVE BAG

The strongest and most perfect package for shipping and storing cement

Economical packing and smallest percentage of breakage
IT IS WATER PROOF!

The West Jersey Bag Co.

Front and Elm Streets CAMDEN, N. J.



Utica Cement

Best Bricklaying Mortar

From one-eighth to one-sixth of the total cubical volume of every brick wall consists of mortar; hence its **quality** is a matter of the **first importance.**

The best brick work in the world, during three-quarters of a century last past, has been done with Utica cement and it stands today as perfect as when first built.

It is the only perfectly successful material for the best grade of stone masonry. Its color is a light buff and is absolutely stainless.

Utica cement is a natural product. Simply mix in the sand, add water and you have a perfect mortar, easy for troweling and everlasting. No lime is needed to make it plastic.

We guarantee every bag and every barrel.

Utica Hydraulic Cement Company

Utica, Illinois

Minnesota Capitol Building, built of Georgia marble. Chicago Public Library, built of Maine granite. Chicago Board of Trade, built of Indiana limestone. Woman's Temple Building, Chicago, built of brick.

Utica cement used for mortar in these four typical constructions. There are thousands of others.

Kosmos Portland Cement Co.

KOSMOS PORTLAND CEMENT COMPANY · OSMOS PORTLAND CEMENT · KOSMOSDALE KENTUCKY · LOUISVILLE, KY.

RELIABILITY

COLOR

STRENGTH

WAR DEPARTMENT
ENGINEER OFFICE, UNITED STATES ARMY.

Nashville, Tenn., February 20, 1909.

KOSMOS PORTLAND CEMENT COMPANY,
Louisville, Ky.

Dear Sirs:—Replying to yours of the 12th instant, I beg to advise you that our records show that 22,250 barrels of Kosmos cement were received at Hales Bar, Tennessee River, for the lock under construction at that point, between June 23 and September 25, 1908. All of this material was tested and all of it accepted under the requirements of the Engineer Department specifications.

Very respectfully,
WM. W. HARTS,
Major, Corps of Engineers

A Destructive Fire Prevented the Completion of the 100,000 Barrel Contract. The Rebuilt Mill is Fire-Proof.

It is universally recognized that no tests are more exacting than those of the War Department. A record of uniform acceptance, such as the above, is the best assurance to the purchaser of the unvarying quality of **KOSMOS** *cement. It is a* **FACT***—more convincing than any amount of* **TALK.**

MILL:
Kosmosdale,
Kentucky

SALES OFFICE:
Paul Jones Building,
Louisville

ASK FOR QUOTATIONS

Kosmos Portland Cement Co.

The Ironton Portland Cement Co.

Manufacturers of the

Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years.

Cement as finely ground as any on the market.

Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry. or Ohio River. **Write for Prices**

The Ironton Portland Cement Co.

Ironton, Ohio

"THE BEST IS NONE TOO GOOD

HIGHEST GRADE of Portland Cement

Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

NORTHWESTERN STATES PORTLAND CEMENT COMPANY

MASON CITY, IOWA.

MEACHAM & WRIGHT COMPANY

CEMENT

CHICAGO

CAPACITY 700,000 BARRELS ANNUALLY

OFFICE ALLENTOWN, PA.

STANDARD SPECIFICATIONS GUARANTEED

Can Be Used With Absolute Safety

Hundreds of users have testified to the excellent results obtained.

Manufactured and Guaranteed by

Omega Portland Cement Company

Jonesville, Michigan

USE

Superior Portland Cement

IN YOUR CONCRETE WORK and be assured of satisfactory results

Ask for a chemical analysis of Superior Cement, and we will show you something which will interest every cement user.

The Superior Portland Cement Co.

General Offices and Sales Department:
Union Trust Bldg., CINCINNATI, O.

WORKS:
SUPERIOR, Lawrence Co., Ohio
on D. T. & I., C. & O., and N. & W. Railways

Washed-Steam Dried and Screened

Ottawa White Sand

Unexcelled for
- Facing Concrete Blocks
- Ornamental Concrete Stone
- White Plaster
- Roofing
- Exterior Plastering
- Sawing Stone and Marble, Etc.

Analysis 99.88

Prices, Freight Rates and Samples on Application

The Only Standard Sand

Ottawa Silica Co.

Ottawa, Illinois

LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

THE OLD WAY

A TEN TO ONE SHOT

THE NEW WAY

You can mend TEN bags with

Little's Sac Paching Sement

in the time it takes to sew ONE.

Time of mending and money saved. Isn't that economy?

Write for further particulars.

THE C. H. LITTLE COMPANY Detroit, Mich.

FOR WATERPROOFING ALL CEMENT WORK, USE "MAUMEE" COMPOUND

WRITE US FOR SAMPLES, INFORMATION AND PRICES

The Maumee Chemical Co.

403 ST. CLAIR BLDG. TOLEDO, OHIO

PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

Wet Process Face Down Damp Curing

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price $65.00 and up. Single Invincibles, $35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data. Just off the press—FREE

THE PETTYJOHN COMPANY

614 North Sixth Street Terre Haute, Indiana

The RICHARDSON Combined Automatic Scale

Guarantees an absolute mixture of limestone and shale without expense of labor, and with a minimum of attention and cost of maintenance.

Pulverized, granular or lumpy materials handled without difficulty with equal facility.

Many Successful Installations

RICHARDSON SCALE CO.

7-8 Park Row, New York 122 Monroe Street, Chicago

CONCRETE ENGINEERING

Engineering Contractors Will Hold Convention.

The American Society of Engineering Contractors will hold the first annual convention in Chicago, February 24, 25 and 26, 1910.

This convention will be held on the last three days of the annual Cement Show and is featured by the officers of the Cement Show.

The National Association of Cement Users will meet on February 21, 22, 23 and 24, and the Illinois Association of Municipal Contractors will hold their convention February 24 to 26, inclusive.

Much good will result to contractors in all lines of work from these conventions, and it is hoped every construction man in the United States who can afford the time will attend.

Reinforced Concrete Sewer Pipe In Detroit.

DETROIT, MICH., Aug. 10.—The city council of this city has decided to allow the use of reinforced concrete sewer pipe in the Central Avenue sewer. The contract for the work was awarded to James Hanley for $44,610 and the products of the Reinforced Concrete Pipe Company of Jackson, Mich., were specified. This is the first sewer of this type to be laid in Detroit.

Concrete Railroad Bridges.

A short time ago a staff representative of ROCK PRODUCTS was the victim of a periodical freshet in Iowa. One fact which impressed itself on his mind more forcibly than any other was the sight of a completely demolished trestle and wooden bridge over a small stream in the southern part of the state. A train had run as near as possible to the structure and the passengers were all unloaded at this point, obliged to shoulder their baggage and walk across a temporary structure and by difficulty up the embankment on the other side, where they boarded another train for their destination.

This is only one of the many examples in Iowa and for that matter in every state of the Union. Periodically we hear of creeks, rivers and lakes on their annual rampage.

Millions of dollars worth of property, to say nothing of the loss of life, is, each year, destroyed and yet apparently no effort is made to remedy these causes. Just as sure as the seasons roll around and the snow on the mountains melt, the flow of waters into the valleys and low lands is bound to result. Ordinarily small streams become raging torrents of water, a most destructive element. Yet, people understanding these conditions deliberately locate in places where they are subject to these annual overflows and take the chance that maybe this year the overflow will not occur. Farmers spend their lives tilling the soil and getting their farms into shape to yield crops, only to have a destructive water flow completely wash out their seed and labors.

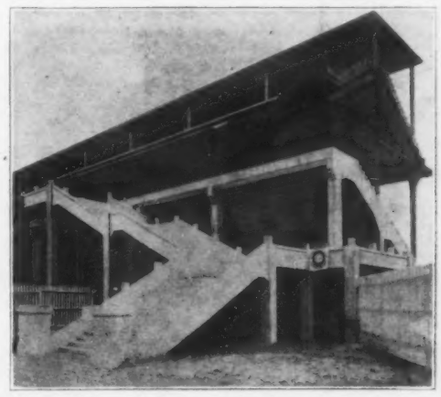
Controlling these elements is not impossible and the cost is trifling when compared to the destruction caused by the overflows.

Not immune from these conditions have been the railroads of the country. Their road beds and tracks are washed out, their bridges and culverts likewise destroyed and yet they take this as a matter of course and make no effort to overcome the dangers. Along every line of railroad we find the old style trestle and bridge of wooden and steel construction which have to be carefully examined and repaired each year. In time they have to be replaced as the timber rots and the steel or iron corrodes unless carefully guarded. into the Mississippi in front of the Town and Coun-

CONCRETE BRIDGE AT CEMENT CITY, MICH.

W. D. Williams, engineer of the Cincinnati Northern railroad, recently adopted a new design of bridge, one of which he constructed at Cement City, Mich. It is an example of an economical means of construction, a permanent structure and one which will not be damaged in any way by freshets. The structure which this bridge supplanted was a source of trouble to the company at all times. The piles on which the trestle rested were driven very deep into a muddy bottom and continually needed repairs.

The length of this bridge is 150 feet. The height from the base to the pier is 52 feet. It consists of three arches of reinforced concrete, monolithic construction. The middle arch is forty feet wide and the work is plainly finished, as it was constructed for



GRAND STAIRWAY OF ST. LOUIS BALL PARK.

practical, permanent and serviceable use rather than for anything ornamental. The concrete used was composed of an aggregate of sand, crushed rock and cement. Of the latter, 2,500 barrels of Peninsular brand was required.

This suggests that the railroads do away with the old style, obsolete bridges composed of timbers and steel and replace them with concrete bridges which will be permanent and which cannot be destroyed by the action of the water. In the end they will find a much more serviceable bridge, requiring less repair and constructed as economically as the types now in use.

Favor Concrete Bridges.

ST. PAUL, MINN, Aug. 18.—C. A. P. Turner, of Minneapolis, Minn., has received numerous congratulations on the beautiful concrete bridge which he erected for the park board, over a ravine debouching into the Mississippi in front of the Town and Country Club grounds. The *Pioneer Press*, of St. Paul, has the following editorial comment to make regarding the structure:

"The structure is a monument to the good taste of the board, as well as an example of the superior effects producible by the use of concrete, as compared with steel or any other material. It is small beside some other bridges, but beauty is not limited by dimensions; and when associated with greater length or height of arch and greater massiveness of structure, it becomes grandeur. The success of every endeavor heretofore made in the erection of concrete bridges in St. Paul should inspire our authorities with a determination that every bridge hereafter erected shall be of concrete, and that the hideous structures of steel now existing shall be replaced with concrete at the very earliest opportunity."

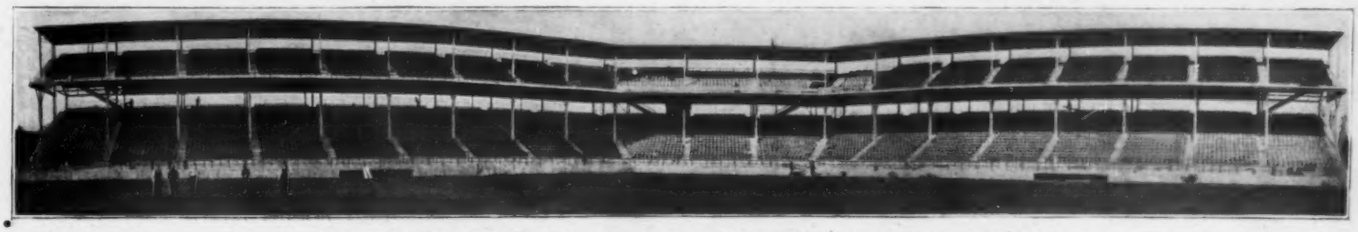
Baseball Grandstand of Concrete.

ST. LOUIS, MO., Aug. 18.—The complete success of the new grandstand erected at the American League Baseball Park is a subject of congratulation. Its beauty and durability, coupled with the fact that it is fireproof, recommends this type of construction at once. J. L. Wees was the architect and H. W. Henby the engineer in charge. Five thousand barrels of Red Ring Portland cement were employed in its construction.

The entire success of this kind of structure will encourage others to build grandstands of concrete in other parts of the country. Pittsburg already has one, as well as Cincinnati and Philadelphia. Chicago will likely build one at the American League Park, as President Charles Comiskey, who has investigated the matter, has expressed himself as favoring concrete.

Wherever the safety of human lives is at stake there should be no question of expense, but as a matter of fact if a permanent structure is desired concrete is much the cheaper class of construction. In the first place, all danger of burning is eliminated, as well as all fear of a collapse from overloading. Wood and steel require painting regularly to preserve them, and their life is very much shorter. Concrete grandstands require no insurance, and last of all, are far more sightly structures. We predict that before very long every grandstand in the country will be built of concrete. This will not happen for a few years, because some of the present stands are comparatively new, but when they show signs of decay they will be replaced by concrete stands. Baseball as a national sport is firmly entrenched in the minds of the public, and where the safety of thousands of lives is at stake every precaution should be taken for their safety.

The Moist Proof Concrete Block Company, Somerville, Mass., has been incorporated by Alphonso A. Wyman and Arthur A. Shafter, for manufacture and sale of concrete blocks. Capital stock, $4,000.



CONCRETE IMPROVEMENT OF AMERICAN LEAGUE BALL PARK AT ST. LOUIS, MO.

Utilization of Water Resources.

(Continued from Page 3.)

hydraulic engineer with his concrete working equipment to turn wasting energy into the accessions of a broader and higher civilization. Your hydraulic engineer is destined to be the greatest progress maker of the ages—his work is to weave the crown of civilization completed. The complete conservation of the losses attendant to floods, the harnessing of the now wasted water energy, will not only pay its own way, but eventually supply all the people with so much of the indispensible factors of living at low cost as to practically eliminate poverty of the kind that grinds. It will radically change the attitude of men to one another, and admit of higher ideals, nobler attainments. In short, if such a state is ever possible, the consumation of perfect civilization can be reached by the path of the intelligent conservation of natural resources alone. The greatest of these are the water resources, for when properly harnessed the processes of nature perpetually give bountifully that kind of toil that kills hope in the human breast.

The Commonwealth Power Company of Michigan now has seven dams, at various points on the Kalamazoo and Grand Rivers, reinforced by three reserve steam plants.

The total horsepower of these combined plants is close to 25,000, and 185 miles of transmission lines carry the current to the various substations, where the high-tension current is reduced through transformers to a voltage suitable for commercial purposes.

In passing, it may be worthy of note that the electrical engineers of the Commonwealth Power Company were the first to employ the high pressure of 40,000 volts on their transmission lines, and by consequence even the generators themselves had to be especially designed and built to order.

William G. Fargo, C. E., of Jackson, Mich., has been largely instrumental in successfully engineering several of the most important hydro-electric developments in Michigan. Mr. Fargo is an engineer of ability and promise, as he is a young man full of practical ideas and sound business judgment.

In 1898-9 he supervised the construction of the Trowbridge dam near Allegan, Mich. The first long electric transmission line in eastern United States was built in connection with this dam. Twenty-six thousand volts are carried ninety miles. The water has 22′ head, is operated at 40,000 volts and generates 2,800 h. p.

ROGERS DAM OF GRAND-RAPIDS-MUSKEGON POWER COMPANY NEAR BIG RAPIDS, MICH.

In 1907 Mr. Fargo completed the work on the Webber dam at Lyons, Mich., for the Commonwealth Power Company. This dam is located on the Grand River, and has 26′ head. It is constructed of concrete, and 22,200 barrels of Peninsular Portland Cement were used in its construction. It contains 15,000 cubic yards of concrete. The turbines here generate 5,000 h. p.

The Rogers dam on the Muskegon River, near Big Rapids, Mich., was designed and constructed under Mr. Fargo's supervision for the Grand Rapids-Muskegon Power Company. This dam is of concrete and used 17,000 barrels of Peninsular Portland Cement. The gateway of this dam is 156′ wide, and the height of the gateway is 60′, and it is 800′ long. It has 40′ head, and generates 6,000 h. p. with 75,000 volts transmission.

In September, 1907, the Grand Rapids-Muskegon Power Company's dam at Croton, Mich., on the Muskegon River, was completed. This dam is of reinforced concrete, 22,000 cubic yards, with Newaygo Portland Cement in the aggregate. The dam has 40′ head. It generates 14,400 h. p. with 75,000 volts transmission. The power plant was designed for 100,000 volts.

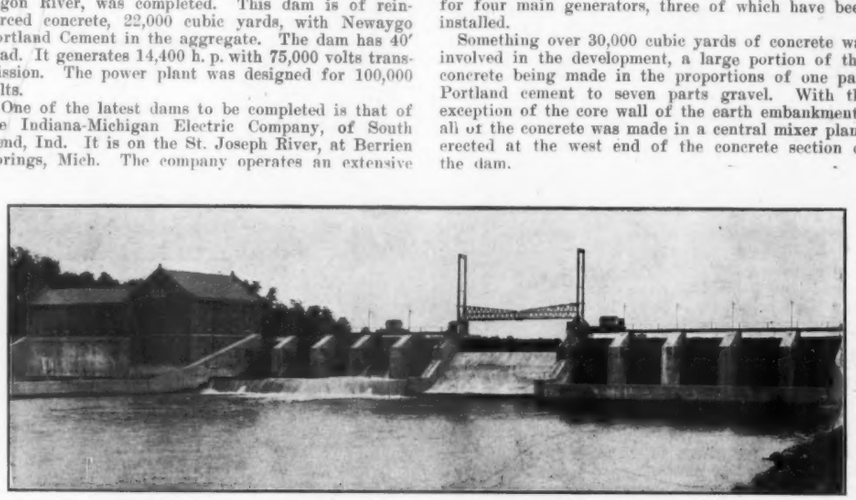
One of the latest dams to be completed is that of the Indiana-Michigan Electric Company, of South Bend, Ind. It is on the St. Joseph River, at Berrien Springs, Mich. The company operates an extensive electric generating and distributing system in southern Michigan and northern Indiana. It furnishes power for lighting cities and the operation of electric railway systems. The plant here produces 7,200 kw. It is located at a narrow gorge in the St. Joseph river, and has 21′ head. The pond above the dam covers 1,800 acres, and has an average width of 2,500′, and is one and one-half miles long.

The dam is wholly of concrete construction, using Peninsular Portland Cement. It has a spillway 149′ long at the crest, which is placed midway in the concrete section, to pass all floating debris.

Extending down stream from the weir wall for 160′ is an apron of reinforced concrete slabs, and beyond that the bottom is protected by a riprap of heavy boulders to a width of 40′. The apron of the gate section thus has a total width of 200′, and is flanked on the embankment side by a concrete wall, transverse to the axis of the dam, to protect the fill. The water that is discharged over the spillway also falls on a reinforced concrete apron, 77′ wide, and with a 40′ strip of riprap on its downstream side. The slabs of the apron at the foot of the gate section are 18′x8.75′ in plan and 2′ to 2.5′ thick. They are attached together with heavy rods, which are bent to form U-bolts, and are interlocked. The slabs have book-joint edges on all four sides, in order to permit any slab of the apron to settle independently of the others and still leave the apron intact. The slabs of the spillway apron, 16′ 7″ by 17′ in plan, are joined in the same manner.

The generator house is 64′ 7″ by 112′ in plan, and is placed with its long axis transverse to the axis of the dam. On each side of it is a penstock section, 50′x98′ in plan, for the turbines of the development. The substructure of the generator house is of concrete, but the superstructure is of paving brick, and is covered with a copper-green tile roof, carried by steel roof trusses. Space is provided in the building for four main generators, three of which have been installed.

Something over 30,000 cubic yards of concrete was involved in the development, a large portion of this concrete being made in the proportions of one part Portland cement to seven parts gravel. With the exception of the core wall of the earth embankments, all of the concrete was made in a central mixer plant, erected at the west end of the concrete section of the dam.



WEBBER DAM OF THE COMMONWEALTH POWER COMPANY, AT LYONS, MICH.

The design and construction of this work were carried on under the supervision of F. A. Bryan, general manager of the Indiana & Michigan Electric Company. William G. Fargo was the engineer in charge. Sanderson & Porter, of New York, were the consulting engineers.

Another plant of which Mr. Fargo is the engineer and which is now in the course of construction is the steel plant at Grand Rapids, Mich., for the Grand Rapids-Muskegon Company.

The plant as it is now constructed is designed as a one-unit plant, and preparations are being made to double this. The foundation and first story of the building are of reinforced concrete, with a superstructure of steel and curtain walls of brick. Peninsula Portland Cement is being used in the concrete work. This plant generates 5,000 kilowats.

Another water power development supervised by Mr. Fargo was the construction of a reinforced concrete dam at Ceresco, Mich., which generates 1,200 h. p.

In all his work Mr. Fargo has used a large amount of concrete, and is a strong advocate of this material, as he has obtained the best results by its use almost exclusively.

What has been done in Michigan can be done in almost any other state, where a water course is available. In the state of Wisconsin 30,000 h. p. is generated by the Wisconsin River, but a small percentage of what can be produced by this stream. A few miles below Wausau the Marathon Paper Company is developing a hydro-electric plant and erecting a mill at a cost of $1,000,000. Here will be a reinforced concrete dam, and manufacturing buildings next thereto.

The Des Moines River, in Iowa, offers a splendid opportunity for the development of water power. Here is an energy allowed to go undeveloped which, if harnessed, could make for Iowa an economy amounting to millions annually.

For many years the upper Mississippi River at St. Paul and Minneapolis has been utilized for driving the great flour mills, and there is not a home in this land or any other where the products produced here are not known. This is the greatest milling market in the world, and ships its flour to every corner of the globe. The water power of the falls of St. Anthony, properly harnessed, is the basic asset of the industry.

At the recent convention of the National Irrigation Congress, held at Spokane, Wash., the subject of water powers was one of the chief topics under consideration.

Besides the water power feature is in many cases the attendant water transportation possibility in many American rivers. Sometimes this even overshadows the value of power development in immediate returns to the people at large. ROCK PRODUCTS has frequently discussed the water transportation topic.

The people at large are awake to these grand economic projects. It has already been decided in this highest tribunal that the conservation of the water and forest resources shall be definitely conserved, harnessed and equipped for the service of the people.

It is a recognized principle that to the Federal government is the responsibility of the great interstate or trunk streams of the natural water system, while the several states must take care of the lesser water courses that lie wholly within their borders. The right of concession must belong to the state, and be distributed irrespective of business, financial or political influence.

The progress herein touched upon is a mere beginning. Every reader knows of much inexcusable neglect in the matter of water power developments. Our engineers should be encouraged to study greater projects to the best uses and opportunities contained in the water waste in every part of the country.

Americans must be up and doing to maintain their prestige, for the study of ultimate economy is not confined to this country by any means; it is world-wide, and already Europeans are progressing very rapidly. Switzerland, France, Norway, Germany and Austria have been developing waterways and water powers steadily for the last two decades, and the sum of all the influences and benefits derived by those countries, directly and indirectly, has resulted in summarily stopping the immigration of desirable Europeans to America or elsewhere.

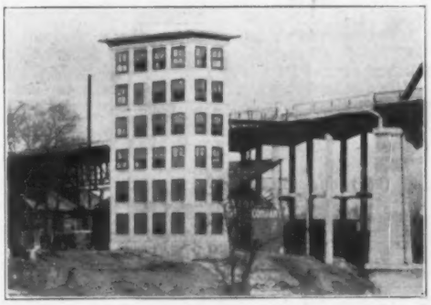
Economical mechanical energy and cheap transportation in large bulk shipments are indispensable factors for the immediate future to achieve. The conservation and equipment of water resources is the only solution. This is universally recognized, and it is each man's duty to give the movement conscientious support.

Block Maker's Handsome Residence.

HAWARDEN, IOWA, Aug. 7.—Hon. L. T. Kenny is an enthusiast on concrete, and one of his chief pleasures consists in showing his beautiful residence to visitors and sight-seers and talking concrete and its uses. This building has demonstrated beyond cavil that frost and moisture-proof buildings can be built with the Anchor block. It is plastered throughout on the blocks without furring out for lath, and the walls are perfectly dry and free from moisture at all times, although during the past five years which this building has stood it has been subjected to the wettest seasons and the coldest winters that this section of Iowa has experienced.

In the construction of his home Mr. Kenny, who is a concrete block manufacturer and builder, used the Anchor continuous air space blocks and trimmed with the products of the Anchor chimney and porch column machine and special cap and sill molds.

He manufactured and sold over 25,000 blocks in 1908, and has manufactured and sold more than



OFFICE BUILDING OF THE NASHVILLE BRIDGE COMPANY, NASHVILLE, TENN.

20,000 blocks up to the present time this year. The Anchor machine making this block has been manufactured and on the market for almost seven years, and is now regarded as a staple article among the manufacturers of concrete building material. There are over 2,000 Anchor block machines now in operation in the United States alone, and 150 are being operated in Canada and foreign countries. The Anchor Concrete Stone Company, of Rock Rapids, Iowa, is a pioneer in the concrete business, and has successfully weathered the opposition of critics and skeptics concerning the use of concrete as a successful building material.

Nashville Bridge Company's Office.

A. G. Dyer, of the Nashville Bridge Company, reports that they are busy with Nashville and out-of-town work and are getting new contracts almost every day. They do both bridge work and reinforced concrete building jobs. They are doing the reinforced roofwork and other details on the Blair flats, a three-story apartment house at Seventh Avenue and Demombreun Street. A feature of this work is that the concrete girders are concealed. Concrete columns and porch work are a part of the job. They are also doing the reinforcements on the Hotel Fletcher, at Gallatin, Tenn. They have the contract for reinforced steel (medium) tower at Vicksburg, Miss., for the United States government.

This firm, the Nashville Bridge Company, has the most complete office of any contracting firm in the South or even in the United States. It is six stories high, all reinforced work, walls, roof and floor. Standing near the Cumberland River, one of the approaches is the Broadway bridge, which strikes the third floor of the building. This office was constructed early this year. It contains draughting rooms, general offices, engineering rooms, dining room and steward apartments, locker quarters and other features. Conveniently near are the forge shops.

All Douglas County Bridges of Concrete.

OMAHA, NEB., Aug. 12.—Douglas county has adopted the policy of substantial bridges in its road system.

Action was taken by the board of county commissioners recently looking towards the substitution of concrete reinforced bridges and culverts in place of the iron work as the "tin" structures wear out. Resolutions were introduced asking for bids on five new bridges to be built entirely of concrete and steel. The bids will be opened August 24.

A few concrete bridges have been built in the county as a matter of experiment. These have been found to be much more substantial and to require less repair than those constructed of iron.

The Hercules Prize Contest.

Believing that the building industry will be greatly benefited by a prize contest that will show many of the great possibilities in the field of building construction, to which the concrete block can be adapted, the Century Cement Machine Company, of Rochester, N. Y., manufacturers of Hercules Concrete Block Machines, one of the oldest, most reliable and the best known block machines made, have inaugurated a novel method of demonstrating the possibilities of this great building material.

The rapid and wonderful growth of this industry has resulted in the erection of many inferior types of buildings, due to the use of either poor materials, unreliable machinery, lack of experience or other similar causes.

This is offset, however, by so many examples of high-class concrete block construction that they deserve to be illustrated and exhibited publicly, and in this manner help to offset any uncertainty that might exist in the minds of those unfamiliar with the artistic, practical and commercial possibilities of this great building material. Any existing prejudice is rapidly dying out, due in a great measure to the efforts of wide-awake, progressive builders, whose work speaks for itself and demonstrates what can be done with the concrete block when properly made and handled.

The endeavor to bring before the world illustrations of these finer types of building construction made possible by the use of Hercules machines and the desire to upbuild and further the interests of the industry in general prompts the Century Cement Machine Company to offer cash prizes to the five best examples of concrete block construction, made by use of Hercules machines, as follows:

	Cash.
First prize	$100
Second prize	75
Third prize	50
Fourth prize	25
Fifth prize	10

These prizes will be awarded at the meeting of the National Association of Cement Users, to be held in Chicago, February 18 to 26, inclusive. Prizes will be awarded by a committee composed of one representative from each of the following trade publications: ROCK PRODUCTS, *American Carpenter and Builder, Concrete, Cement World, Cement Age, Concrete Age,* and *Cement Era.*

These representatives will in turn select a leading architect, also a well known and competent builder familiar with this type of building construction, together with a representative of one leading Portland cement manufacturing company, all of whom will be added to the committee, and the decision of the majority will determine the winners.

This contest will be open to all users of Hercules Concrete Block machines and will cover all types of building construction, such as residences, churches, factories, etc. Photographs of residences should be accompanied with floor plans and the cost should also be given wherever possible. All photographs should be 8"x10" in size.

This contest is open to all operators of Hercules machines, so if you have constructed a building of concrete blocks, or if the blocks you have made have been used in the construction of a building that you feel proud of, send a photograph at once with floor plans, cost and your name and address to The Century Cement Machine Company, 288-298 St. Paul Street, Rochester, N. Y.

Each entry will be promptly acknowledged by the company and due notice of awards will be given at the convention.

The efforts of the Century Cement Machine Company to further the interests of the concrete block industry in general deserves the hearty coöperation of all interested in this field.

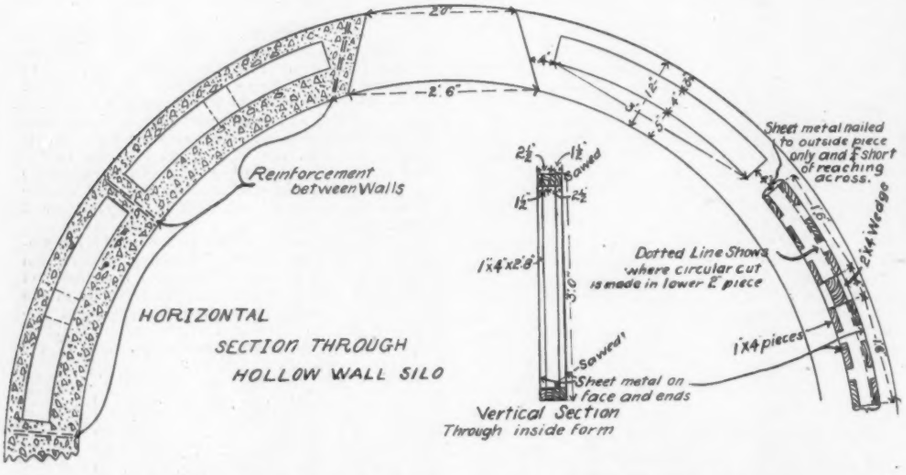
KENNY RESIDENCE BUILT OF ANCHOR CONCRETE BLOCKS.

CONCRETE SILOS.

One of the Most Important Features of Modern Farm Equipment Is Now Waiting For Special Efforts to Get the Money.

There is no investment comparable in its direct revenue-producing characteristics for the American farmer to that of erecting a silo for the preservation and preparation of the food for his farm animals. The National Agricultural Department, and practically every State commission and society have endorsed the use of silage for cattle food—more than that, it is strongly recommended both from an economic standpoint and that of improving the animal and animal products. Doubtless there are many places where silos can be sold and erected right now, with the winter season coming on and the farmers generally plentifully supplied with money for such a purpose. The expert concrete worker needs, so to speak, only to look over his shoulder wherever he may be located to find profitable employment right away. All the necessary materials can be had promptly in every possible market, and if there is anything lacking it is the special job of ROCK PRODUCTS to see that you get the right information in the quickest possible time.

There are many ways to build a silo. The matter has been gone over time and again by this journal in years gone by, and the following instructions in



detail, taken from Bulletin No. 24 of the Association of American Portland Cement Manufacturers, and written by C. W. Gaylord and Percy H. Wilson, engineers of recognized standing, is given for practical guidance of all those who can make use of it.

HOLLOW WALL SOLID CONCRETE SILO.

A hollow wall concrete silo can be constructed in exactly the same way as a solid wall silo, with the following changes:

FORMS.

"Erect the wooden forms with a 12-inch space between them. Construct as many circular boxes 1½ feet long, 3 feet deep, and 4 inches thick as are necessary to go around the wall. These boxes are used in pairs, the pairs being placed 4 inches apart in between the silo forms. The concrete is placed between the forms and the boxes, and not inside the boxes. This makes a 4-inch hollow space between the outer and inner walls. Illustration shows the details of how these forms or boxes are built so they can be collapsed and taken out for each raising of the circular forms.

"The top and bottom pieces are sawed on the proper circle form a 2-inch board, and are just 4 inches wide. They are then made into a frame by nailing three 1"x4"x2' 8" pieces on both sides. The top and bottom 2x4's are then sawed on a bevel from end to end. The level in both top and bottom of the box slopes in the same direction.

"This cuts the box in half when made, so that you have two boxes, 3 feet by 1½ feet by 2 inches, which, when fitted together, make the proper width of 4 inches.

"The outside and one end of each half is covered with sheet metal, No. 24 gauge. The metal on the end of one half should lap the metal on the end of the other half by about 2 inches.

"The metal is not nailed to the other end of either half, but is allowed to follow the curve of the form 3 inches beyond the end.

"Two other boxes are made up in exactly the same way, and these four boxes fit together to make the completed form for the hollow air space.

PLACING THE BOXES.

"As the silage will not freeze below the ground line, the hollow air space need not be started until the forms are set for the third 3-foot course.

"First set the outside and inside circular forms. Nail a piece of 1"x4" temporarily along the top of each box, thus holding them together. Set the boxes in the form, using two, and placing them so the 3-inch laps of sheet metal at the ends come together as shown in drawing of detail of boxes. When the concrete is placed, the boxes will be forced together from the ends, unless wedges are placed near the bottom and at the top to hold them apart. Two 4-inch wedges should be used for this, and they should be large enough to hold the boxes 4 inches apart.

"All the boxes for one 3-foot course of concrete should be placed at one time. They can be kept the proper distance from the outside and inside forms by means of spacing boards of the proper width.

PLACING THE CONCRETE.

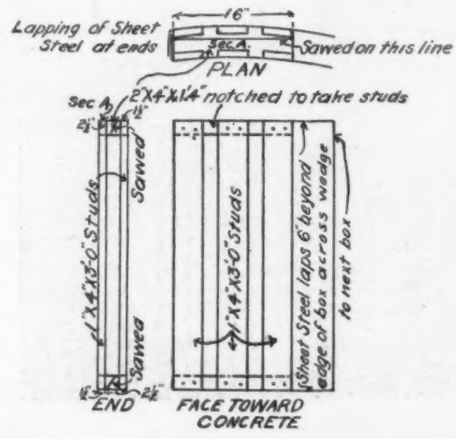
"Place the concrete around the boxes after thorough mixing and tamping it in place.

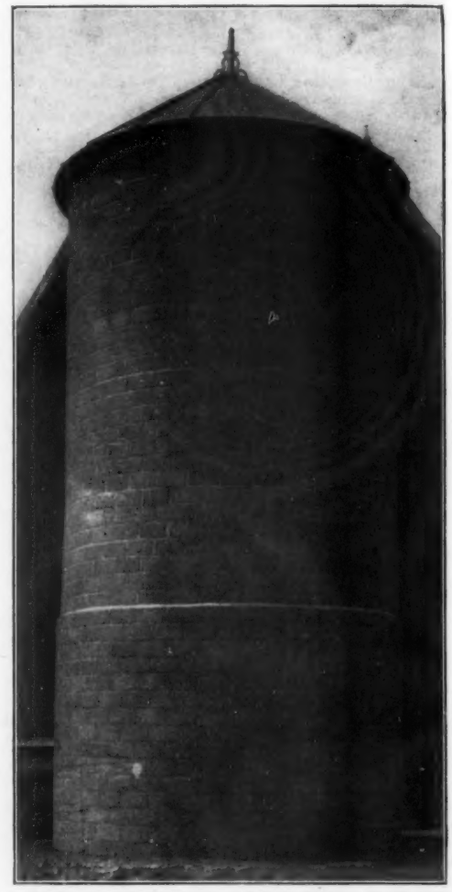
REMOVING THE BOXES.

"As soon as the concrete is set sufficiently, collapse the boxes by removing the temporary 1x4, pulling out the wedges and lifting out the boxes one-half at a time. Pull out section marked A first. Be sure that the sheet metal nailed across the two ends is at least ¼ inch short of reaching the outside face of the side to which it is not nailed. If it extends all the way across to the end it will bind.

RESETTING THE BOXES.

"If each box form were placed directly over the opening made by the box form in the course below





CONCRETE BLOCK SILO ON W. F. COWHAM'S FARM NEAR JACKSON, MICH.

it, the silo walls would not have a continuous air space, but a series of 3-foot 4-inch air spaces running from top to bottom, with a 4-inch wall of concrete between them. To avoid this and make the air space continuous, on moving up a course set each box half its length further around, so that the wedges in the middle will come directly over the solid 4-inch partition between the spaces in the course blow.

"Pieces of green plank 1"x4"x6" will have to be placed in the opening below each 4-inch space between the forms, before resetting. If this is not done, the concrete will run into the opening below the forms, as each 4-inch partition between the spaces comes over the middle of the space below. They are left in the wall of the silo.

"Special small boxes may have to be made to go alongside the door openings. Do not allow any box to come within one foot of the door openings, which will make that part solid concrete.

"Before the concrete for the last foot of the wall is placed, remove the boxes and lay either strips of green, well soaked boards, or strips of sheet metal over the 4-inch opening; then fill in the last foot of concrete. This seals the air space.

"It is well to leave several holes through the inside wall, connecting the dead air space with the inside of the silo. This can be done by using two or three wooden plugs and driving them out when the wall has set.

PATENTED FORMS.

"Several companies building silos have patented forms for forming the hollow air spaces, notably the New Enterprise Concrete Machinery Company, of Chicago. They are collapsible steel forms. The outer forms are reinforced with angle steel bars; the inner forms are of 14-gauge steel and are held in position by gauges and keys. By a simple turning of the keys the forms are loosened or tightened. Turning the key half way around loosens the forms for removal or adjustment. The forms are 3½ feet in height and have a variable circumference, so that they can build a silo of any diameter.

"These forms or machines are easily operated and common labor can do any part of the work in laying

walls. No expert or high-priced mechanics are required.

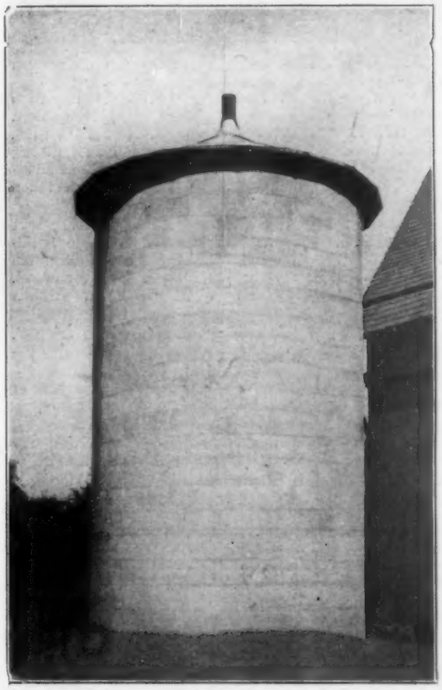
PATENTED REINFORCING.

"There are a number of special forms of reinforcing made by manufacturers which present certain advantages over the ordinary kind. The American Steel & Wire Company, of Chicago, Ill., make the handy triangle wire-mesh reinforcing, which comes in sheets or rolls, and from them can be obtained a mesh which will take the place of ordinary rods or wires commonly used by engineers. Care must be exercised in getting this class of reinforcement in the proper position in the concrete wall. It has the advantage of exactly spacing the horizontal and vertical reinforcing, automatically.

"Another is the ferroinclave reinforcing, manufactured by the Brown Hoisting Machinery Company, of Cleveland, Ohio. The sheets are curved to the shape of the silo, and act as a form as well as a reinforcing material. The concrete is placed on this, the thickness of concrete dependent on the height of the silo. Both the inside and the outside are plastered with concrete, so the metal itself is not exposed to the silage or the weather.

CEMENT OR CONCRETE BLOCK SILOS.

"Concrete blocks are made in two ways—hollow and solid. Practically all silos are built of hollow blocks. The blocks may be made by the farmer himself, or he may buy them from a block manufac-



CONCRETE BLOCK SILO ON FARM OF RANSOM R. BARNES, CLYDE, N. Y.

turer. If the blocks are bought, care must be taken to secure well-seasoned ones. That is, the blocks must have been made a sufficient time before using to give them time to thoroughly set.

"A full description of how to make concrete blocks will be furnished on application.

"A concrete block silo, on the property of W. F. Cowham, of Jackson, Mich., is 35 feet high and 14' inside diameter, built by the Cement Products Company, of Jackson. The blocks for the lower third of the height are 8 inches high by 10 inches thick and 16 inches long; the blocks in the upper two-thirds are 8 inches high by 8 inches thick by 16 inches long. Every third course is reinforced with a ½-inch round iron embedded in grooves in the block. The blocks are laid in cement mortar, made in the proportion of one part Portland cement and two parts sand.

John W. Boardman's silo, near Jackson, Mich., is molded of reinforced concrete and was built in 1902. It is 16' in diameter 32' high, with wall 8" thick for the first sixteen feet from the ground. The balance is 6" thick. Footings extend 3' 6" into the ground to hard clay. The walls are reinforced

SILO BUILT WITH FERROINCLAVE REINFORCEMENT.

laterally with barbed fence wire laid in the concrete at intervals of 18" as the material rose in the forms. The roof of this silo is also of concrete.

The silo on the farm of Ransom R. Barnes, at Clyde, N. Y., was erected by B. F. Lockwood, manager of the Lyons Sewer Pipe and Wall Plaster Company, of Lyons, N. Y. This silo is 24' high, 12' in diameter, and the size of the blocks used is 1' wide and 2' long.

"Many successful concrete silos have been built by methods other than those described, but for one who does not know how to handle concrete, the best results will be obtained by following closely the methods described herein.

"In Bulletin No. 129 of the Maryland Agricultural Experiment Station, on page 73, we find the following paragraph relative to concrete silos:

"'When all things are considered, the reinforced concrete silo is probably the best and most economical one that can be built. * * * They may be built of hollowed curved blocks made especially for this purpose or solid reinforced wall may be used.

"'The latter method of construction would probably be the cheaper and more durable and satisfactory.'

"For further assistance in the construction of a concrete silo, apply to the Agricultural Department, Bureau of Animal Industry, Dairy Division, Washington, D. C."

CONCRETE BLOCK SILO.

FOR HIGHER IDEALS.

Delighted With the Pauly Building Tile, a Practical Expert Tells of His Experience.

By F. J. KOEHLER.

No branch of the building art of the present day has to struggle and fight for its very existence so hard as the concrete industry. It will come out "king" all right enough, we all know it, and our adversaries know it, too, but there is no question that we give them too much quarter by our own—well, excuse me, gentle reader—ignorance and dishonesty.

In a recent conversation I told the editor of ROCK PRODUCTS that we have too many books on concrete, which are filled up with colloquialism, phraseology and digression, that will do good only to a few, while inexpensive treatises, with real good practical hints, written in plain, common English are very few and rare, and I pointed out where his journal could do much good by publishing reports, hints and suggestions gained from impartial investigations and practical experiments. His invitation to contribute this article followed.

For more than twenty-five years my vocation has been exclusively on the lines of architecture and plastic art, and about four-fifths of this time I have been more or less active in the development of con-

CONCRETE SILO OF J. W. BOARDMAN, JACKSON, MICH.

crete. From the earliest days it was my conviction that concrete would become the building material of the future, but I was also convinced that it had to undergo changes and setbacks of considerable dimensions before it could emerge victoriously from the chaos of failures and blunders caused through ignorance, carelessness, greediness or even criminal neglect. I have seen many failures, all and each of which can be traced back to one or more of these four causes.

In a little booklet I have written, dedicated to the would-be builder, and which I intend to publish at an early date, I devote a chapter to "Failures of Concrete I Have Seen," and there are quite a number of such cases. Studying them with an unprejudiced mind, one must wonder how it is that we have not much more trouble, loss and expense—not to mention criminal prosecution for neglect; and more wonder that concrete has attained such a recognition as it commands today. These failures have not happened exclusively in villages, but in the larger cities as well. The absurd and ridiculous restrictions regarding concrete construction with which our building ordinances are adorned nowadays are striking proofs of the position taken by the opposition to concrete. I could point out in the very heart of Chicago structures recently built which a gang of men

in a drunken carousal could easily make tumble over. Just a little frost and the alternate thaw for a few seasons will do it without them.

Concrete must stand upon the higher plane of constructional and architectural art, and then there is no escape from it. You have to do everything right, and by doing so and knowing that you cannot make changes to your heart's content after a building is up, you will have to exercise greater care in the plans by making it roomy, healthy and practical to secure a sound investment. The rigid inspection of all materials as to quality is always indispensable.

Regarding the concrete block, it is gratifying to notice its improvement. There are still bad blocks, lots of them, but there are also blocks on the market which compare very favorably with the best bricks obtainable today. I have seen blocks made under a concentrated mechanical pressure of 80 to 100 tons, the aggregates being wisely chosen and a good brand of cement used. When properly cured I have found such blocks excellent, and if to the mixture is added a certain percentage of hydrate of lime, free from magnesia if possible, they absorb less than 4 per cent moisture, which is 1 per cent less than I have found high-grade bricks will suck up.

The architects, as a whole, are not satisfied with the quality of the concrete block as it is put on the market today, notwithstanding the fact that we turn out a much better product than a few years ago, and though some of our manufacturers offer a block which in quality as well as appearance makes the common brick a rather cheap looking article. But it is like a poor fellow who has been caught in the act of wrongdoing and put in the pen. He may try ever so much afterwards to be a decent and well behaving individual, society will point at him as the man with a bad record.

One of the greatest drawbacks in the field of concrete, and especially of the hollow concrete building block, is its tendency to absorb moisture. I have stated above that the concrete industry has succeeded already to make a better building block as far as its imperviousness comes into consideration, than the best common brick manufactured today. We can attain that by computing it rightly, *i. e.*, by mixing certain types of minerals of a certain quality with a given quantity of water to a consistency which, in its chemical action and reaction, will make the strongest artificial stone. Such stones absorb very little water.

The writer of this article had occasion the other day to see tile blocks of concrete manufactured under patent rights by the Concrete Stone & Sand Company, Youngstown, O., of which A. A. Pauly is the patentee and general manager. These tiles are made by pouring a liquid concrete mixture into a heated molding matrix. An ejector operated by means of powerful levers pushes the tile out of the mold, and so on.

It is not my intention to give a description of the process of manufacture of this article, as I am not sufficiently acquainted with it. I must refer any interested reader to write to this concern for a catalog and pamphlets, which request, I presume, will be readily complied with. I understand they are manufacturing tile as well as machinery. From printed matter before me I conclude they are doing already an enormous business, and machinery has been sold and installed in many states, though this first plant is in operation only two years or less. I do not know these people and never saw their factory, except by picture, but I saw the tile and can estimate the cost of it, and that counts some.

Waterproof? Why, those tile seem to have undergone the complete process of crystallization right at their birth, which, according to our highest authorities, is the means against permeability. They are light in weight and their compressive strength is considerable. When striking them with a hard instrument, a pleasant metallic sound emenates. In appearance they look the "finished product" which could not be otherwise, on account of the closeness and tightness of the molds and the mechanical contrivances applied in the operation.

Of course, I may be letting my judgment run wild from information gained only through printed description of the process. But, if the inventor has really succeeded in ejecting such tile from one solid iron mold then he is to be congratulated indeed. I say this advisedly, on account of many years' experience of my own in the working and handling of iron and white metal molds and molds from the plainest to the most intricate.

These tile are excellent. I saw them, I have tested them as to their propensity of absorption, their texture and appearance, and if the computations as to the cost of manufacture, as given in the prospectus, is correct, then I say we are already in the midst of a revolution in the house building material business. A tile 8"x8"x16", the material mixed by hand, the machine operated by hand power, will cost 4⅝ cents or less. Why, that will beat the concrete block to a frazzle. Then the reduced cost of shipping and laying, on account of its small weight, etc. All of these things are unquestionably true by physical demonstration, and it is but little short of miraculous, but if reports are true, even Mr. Pauly may soon find his match. It is said that a man from Missouri has applied for a patent upon an apparatus where a conveyor in the form of a hose is connected with a concrete mixer. This mixer in turn is supplied with a mysterious and magical controller, which has in its center a disk, on which, according to requirements, a cow shed, a stable, a beautiful city residence, or what not, is piled up. When the operator of this fine mechanism begins with a magnetic needle of doubtless special design to follow up the contours of the design, the mixer begins to rotate, and half a dozen men—the only labor required—start to fill the receiver with the aggregates, the hose mechanically finds its way to the building and discharges the ready-made concrete just at the spot where the man with the magnetic needle directs. A common dwelling, it is claimed, can be put up in twelve hours, but skyscrapers will take as long as three days before they are ready for moving in. The doors and windows the patentees have not yet succeeded in installing by way of the mixer and hose. They have to be ordered still in the planing mill. This illustrates the extravagant statements that are made with regard to the future expansion of concrete, which is admittedly wonderful, but to the initiated in all respects reasonable, logical and practical.

New Concrete Dam.

GREENFIELD, MASS., Aug. 16.—The Boston and Maine Railroad is erecting a 60-foot concrete dam on the South River at Conway to replace the old dam. The dam gives 100 foot of head, and a storage capacity of 120,000,000 gallons. It is in charge of the company's engineers.

New Reinforced Concrete School House.

NEWARK, N. J., Aug. 13.—At a meeting of the Board of Education of Irvington recently the new four-room fireproof school house on Mount Vernon Avenue was officially accepted by the board. This is the first fireproof school building erected by the town of Irvington.

The new building is constructed entirely of reinforced concrete, including the exterior walls, which are ornamented with Moravian tile panels. The roof is of slate, having copper flashings, etc. The stairs, which are also of reinforced concrete, are equipped with safety treads to prevent slipping.

The building was designed by Joseph B. Allen, of Irvington, and was constructed by the American Concrete-Steel Company, of Newark.

Install Concrete Machine.

MARQUETTE, MICH., Aug. 12.—A. W. Anderson & Son, the Houghton concrete contractors, have received two machines to be used in making building material. One manufactures building blocks in various sizes, and the other is a machine which molds concrete bricks. The firm expects to go into the business of manufacturing building material on a small scale.

Detroit Department Store.

DETROIT, MICH., Aug. 4.—The Taylor, Wolfenden Dry Goods Company are erecting a new department store on Woodward Avenue in this city which will be a model building in every respect for mercantile purposes. F. H. Goddard is general contractor on the work. Eight thousand barrels of Huron Portland cement, supplied by Bartlett Company, of Detroit, is to be used in the construction of this building.

The Hydrated Lime and Concrete Product Company, Ogden, Utah, has been incorporated with a capital stock of $50,000 to manufacture pipe, tile and building blocks, by Joseph L. Carlson, president; John Farr, vice president; H. H. Goddard, secretary and treasurer; Albert Swingewood and C. W. Brooks, directors.

The Philadelphia Hollow Concrete Column Company, Camden, N. J., has been incorporated with a capital stock of $50,000 by J. E. Sutton, M. M. Wilson, and Charles Bridge.

Ed Ottoman, the concrete block manufacturer, South Haven, Mich., has been awarded the contract for building the solid cement back to the fire range used by Troop A, for their practice in marksmanship. The cost of construction will be $300.

Fire Test in New York.

"Will you walk into my parlor?" said the spider to the fly.—Or Dear Mr. Mayor McClellan, will you kindly use our laboratory, quoth the National Fireproofing Company, to make tests of concrete for the guidance of New York's building department.

But the mayor of New York was in nowise deceived, because he and his constituents prefer to get fair and unbiased information, in fact they are in need of no other.

Chief Engineer Lewis has been accordingly instructed to erect several test structures at a site under the Williamsburg bridge for the purpose of giving a practical fire test to cinder concrete, reinforced concrete and hollow terra cotta tile fireproofing. The concrete structures will naturally have one great disadvantage from the fact that practically green construction will be tested, while the tile bought on the open market will be in its maximum finished condition.

Chief Engineer Lewis will doubtless summon a staff of the most eminent engineering talent of the world to assist in his determinations, whose very personalities will be a guarantee to the public of the fairness of the tests. Otherwise the fire tests in New York will amount to a farce and a needless expense.

The adoption of the code has for this reason been put over until after the election.

Receive Large Contracts.

NEW YORK, Aug. 14.—The Turner Construction Company has been awarded the contract for the construction of the A. B. Emmet building, Fifty-fifth Street near Tenth Avenue, Manhattan, New York City; D. E. Baxter, 77 Pike Street, New York City, architect. Champion Laundry, lessee. This building will be 75'x95', four stories in height and of reinforced concrete throughout. Work will be undertaken at once.

They have also been awarded the general contract for the construction of a reinforced concrete building 240'x64', four stories high, for the Carborundum Company, Niagara Falls, N. Y. C. H. Greenwood, engineer, care of owners. Work will be undertaken at once.

Two reinforced concrete warehouses each 150'x150', six stories and basement, to be constructed for the Bush Terminal Company, Thirty-sixth Street, South Brooklyn, N. Y.; William Higginson, architect; work to be undertaken at once.

Reinforced concrete warehouse 100'x50', five stories and basement in height, for Hersh Bros., Mulberry Street, Newark, N. J. Nathan Meyers, architect; work to be undertaken at once.

The Concrete Construction Company has been incorporated at Nashville, Tenn., with a capital stock of $25,000 by Joseph J. Roach, James W. Handly, George S. Parkes, Clarence B. Wallace and Charles Sykes.

The Fort Madison Tile Company has been organized at Fort Madison, Iowa, by Thomas P. Hallowell, Edwin C. Queberg and Eugene N. Jack, Mr. Queberg being the manager. They have established a factory for the manufacture of cement tile, blocks, brick and other cement products. They have started with a thriving business and the demand exceeds the supply.

The Buckeye Concrete Company, Germantown, Ohio, has been incorporated with a capital stock of $10,000, by A. C. Kercher, John Flushart, Oscar Miller, John C. Banker and Joseph Endress, Jr.

The Diamond Wall Cement Company, Williamsport, Pa., under the management of N. H. Culver, has begun the manufacture of Portland cement brick and concrete building blocks.

The Block Concrete Company, of New Haven, Conn., has been incorporated with a capital stock of $50,000, by Joseph C. Kelly, John H. Moore, Frank E. Lester, A. M. Corbet, and Frank C. Smith, W. M. Allen, F. S. Grant and W. B. Malona.

The Oklahoma and Texas Cement Brick Company, of Oklahoma City, Okla., has been incorporated with a capital stock of $50,000 by W. K. Hamilton, E. L. Benedict and W. C. Kinney.

PHILADELPHIA CORRESPONDENCE.

(Continued from Page 32.)

J. Turley Allen, of James T. Allen & Sons, plasterers, 212 South Tenth Street, says they are busy, but mainly on small jobs, of which there is sufficient to keep the staff moving lively. He regards outlook favorably.

The Philadelphia Fire Brick Works, 2306 Vine Street, is busy, admits a decided improvement in trading right along, and is optimistic as to outlook.

Cyrus Borgner, of the Cyrus Borgner Company, fire brick and clay retorts, 234 North Twenty-third Street, always conservative in his expressions on trade questions, testifies to an improvement over last year's business, and is sanguine as to the return of better times as the fall advances.

Jeremiah Seiders, a contractor and builder, of Reading, Pa., died on July 18, aged 79 years.

G. Samuel Flick, of Lancaster, Pa., a prominent building contractor, died on July 29. He was 55 years old.

John G. Coder, of the contracting firm of Coder & Miller, Harrisburg, Pa., died suddenly. He built the Harrisburg filter plant and the Pennsylvania Building, at the World's Fair. He was 65 years old.

Creditors filed a petition in the United States District Court recently, to have the Thomas Engineering Company, of Allentown, Pa., adjudged an involuntary bankrupt. The names of the petitioning creditors and the amounts of their claims are: The Philadelphia Electric Company, $4,198.55; the Western Electric Company, $1,242.74; the Pringle Electric Manufacturing Company, $240.15. David H. Thomas was appointed receiver of the company, under a bond of $15,000.

Judgment was entered up against the Trenton Fire Brick Company, on July 31, in favor of Hendly & Co., for $220.22.

The Philadelphia Hollow Concrete Column Company, object to buy and sell concrete and other building materials, capital $50,000, was incorporated under New Jersey state laws on July 19. Incorporators, J. F. Sutton, M. M. Willson and Charles Bridge.

The Western States Engineering Company, St. Louis, Mo., capitalized at $300,000, obtained a charter under Delaware state laws on July 20.

The Joy Construction Company, Jersey City, N. J., was chartered under New Jersey state laws on July 20, capitalization $100,000.

The Majestic Realty & Construction Company, Jersey City, N. J., obtained a charter under New Jersey state laws on July 28; caiptal $25,000.

The G. J. Hornung Contracting Company, West New York, N. J., capitalized at $50,000, was chartered under New Jersey state laws on August 2.

The Panhandle Construction Company, East Orange, N. J., was incorporated under New Jersey state laws on August 6. Capital $100,000.

The Bloomsburg Brick & Construction Company, Bloomsburg, Pa., capitalized at $5,000, was chartered under Pennsylvania state laws on August 6.

The Alvarado Construction Company, Camden, N. J., was incorporated under New Jersey state laws on August 6. Capital $200,000.

The Delaware Construction Company, Wilmington, Del., received a charter under Delaware state laws on August 9. Capital $25,000.

The Warren Portland Cement Company, Jersey City, N. J., capitalized at $1,500,000, was granted a charter under New Jersey state laws on August 9.

The Albert J. Meisol Construction Company, Newark, N. J., was incorporated under New Jersey state laws on August 11. Capital $50,000.

The Prentice-Sturges Engineering & Construction Company, Scranton, Pa., obtained a charter under New Jersey state laws on August 11. Capitalization $300,000.

BALTIMORE.

BALTIMORE, MD., Aug. 17.—There has been somewhat of a break in the cement market in this city during the past month and now the dealers are not fighting so much among themselves and better prices are looked for before the end of the month. Maryland, Delaware and parts of Pennsylvania and Virginia continue to be the battleground of the market, but conditions are quieting down considerably and the indications are that the market is growing stronger all the time. A few weeks ago the prices had gotten to such a point that considerable money was being lost by the large concerns, and several meetings have been held to better the conditions. Representatives of the different firms in the city got together and discussed the situation, but did not make any sort of an agreement. The principal thing done was that each firm was impressed with the fact that to keep on cutting prices as had been done for the past two months would only bring worse results.

Since the meetings there has been somewhat of a holdup in the price cutting business, and the conditions are stiffening a little. The plants are running on good time and there is a steady demand. The dealers claim that they are getting good business and that with the number of building operations now going on, the outlook is bright for the coming winter.

A representative of one of the largest companies in Pennsylvania said that he believed that the price of cement would jump either 10 or 15 cents a barrel before the first of September. Others intimated as much and they seem to have good reasons for their statements.

The makers and sellers of clay products in this section are wearing happy smiles and report that the conditions are fine. The plants are running on good time and the demand for the output is increasing.

One of the most important building operations to be started in this city this fall will be the new building of the Fidelity & Deposit Company, of Maryland. Plans for the structure, which will be fireproof and fifteen stories high, have been completed by Architects Baldwin & Pennington and the following contractors have been invited to bid on the construction: Thompson Starrett, of New York; Cramp & Company, of Philadelphia; Norcross Brothers Company, Worcester, Mass.; Wells Brothers Company, Chicago; John Gill & Son, Cleveland; A. & S. Wilson Company, Pittsburg; James Stewart & Company, St. Louis; Westlake Construction Company, St. Louis; George J. Clover, New Orleans; Morrow Brothers and Henry Smith & Sons Company, of Baltimore. The building will be located at the northwest corner of Charles and Lexington Streets, at the present site of the company's quarters. The present building, which is an eight-story granite structure, will be used in the new building. The walls will be used and run up seven more stories. The total dimensions of the new building will be 125x144 feet. The foundation will be stone and concrete and there will be two stories under ground. The front walls will be granite and the rear will be brick. Fireproof construction will be used throughout and all the latest improvements for a modern skyscraper will be installed. The owners hope to have the steel work up before the first of next year. There will be six public and one private plunger elevators installed. Bids will be received for the work until about the middle of September.

The work of building the new $250,000 State tobacco warehouse is progressing rapidly by the contractor, John Waters, and from present indications the building will be completed by the first of the year. The structure is made of steel, concrete and brick and is located at the intersection of Light, Conway and Charles Streets in South Baltimore, opposite the harbor. It is six stories high and the dimensions are 317x83 feet. The foundation is made of concrete piles, which were driven to a depth of about 30 feet. All the steel framework is up and the walls are up to the second story. Stone and Indiana limestone trimmings are being used, and the floors are all reinforced concrete. There are a number of subcontracts to be let before the building is completed, among them being a slag roof. The concrete work is being done by the Cranford Paving Company and the granite is being furnished by the Guilford & Waterville Company. Steel was furnished by the Standard Concrete Steel Company, of New York. The work has been in progress since the first of last April.

The annual excursion of the members of the Builders' Exchange will leave here on Friday, September 3, on one of the steamers of the Chesapeake Steamship Company for Old Point Comfort, Norfolk and Cape Henry, Va. The steamer, which will be one of the finest of the line, will leave at 6 o'clock in the afternoon and will arrive at Old Point Comfort the next morning. The excursionists will be given a chance to visit Fortress Monroe and places of interest around the Hampton Roads. That evening will be spent in Norfolk and the next day they will go to Cape Henry. There are a number of other places of interest around Norfolk that will be visited. The party will return home Tuesday morning. The committee of arrangements is composed of H. H. Maclellan, chairman; J. J. Keller, Jr., J. A. Marian, Arthur F. West, E. Frank Welsh and I. H. Scates, secretary.

Edward Brady & Son has been awarded the contract for a new pumping station of the Baltimore & Ohio Railroad Company, to be built at the Locust Point yards in this city. The building will be a fireproof structure and will cost about $40,000.

ST. LOUIS.

ST. LOUIS, MO., Aug. 19.—The extreme heat which has prevailed in the city and vicinity during the past fortnight has checked, to some extent, the usual activity in building operations, and there are, as customary at this season of the year, a large number of absentees. This class includes, quite naturally, several capitalists and real estate men. We hear, however, of a considerable amount of building to be entered upon in the near future. All the leading dealers in building material report a good demand, coming from both city and country trade. The manufacturers of cement, lime, plaster, etc., uniformly find an increasing business in their products. Crop prospects in this section are almost record-breaking. Money is plentiful and in good request. Later on, a movement to the country to handle the crops will be likely to advance rates somewhat. The iron interests of the city are being rushed, and railroad companies are preparing for an immense traffic this fall.

The McKinley System will build at Venice, Ill., a power plant to cost, complete, about $500,000. The building will be constructed on a mass of concrete piles, sunk in the ground at Carr Slough, from 60 to 100 feet to rock bottom. The floor will be of solid concrete several feet thick. The plant will have a capacity of 10,000 h. p.

Mrs. Grace A. Leathe, said to be the richest woman in St. Louis, will erect a warehouse on her Poplar Street property between Fourteenth and Sixteenth Streets. It will be called the Leathe station, and will cover two city blocks, costing approximately $1,000,000. The warehouse will be nine or ten stories in height, and will be entirely fireproof.

The Hague Investment Company has completed plans for the erection of an office building on the north side of Ohio street adjoining the new La Salle Building. The building is to be thirteen stories in height, and will cost about $250,000. The Hague Investment Company is the builder.

A seven-story commercial building to cost about $75,000 is planned for the south side of Pine Street, just west of Eighteenth Street. The building will occupy a lot 36 feet front by 109 feet deep. The building is to be fireproof and have an attractive exterior.

A theatre to be known as the Princess, to be located on Grand Avenue just south of Olive Street, is now assured as an addition to the city's playhouses. The structure will cost about $220,000, and will be one of the handsomest in the middle west. It is to have a seating capacity of 1,800, and architecturally is to be imposing. Clymer & Drischler are the architects, and the McClure Construction Company will build it. The work of razing the building now on the site is already partially completed.

A four-story building is to be erected on the corner of Grand Avenue and Herbert Street, to be the home of the North St. Louis Trust Company. It will represent an outlay of about $75,000. It will be constructed of brick and stone, and its finish will be in marble and hardwood. The lot is 80x100 feet.

A ten-story office building will be erected at the corner of Chestnut and Eighth Streets, to cost about $200,000. The structure will be known as the Scott Building.

The Regal and Waterman Apartments, now under way, are designed to give the impression of fine private dwellings. They occupy a lot 135x185 feet. The exterior is red brick with black mortar. The trimmings are of cut stone. Edward F. Nolte is the architect. The owner, Oscar A. Elmo, built the Marion Apartments.

A new building will be erected for the use of the Bridge postoffice sub-station at the entrance to Ead's Bridge. It will be of brick and two stories high.

The Board of Public Improvements has let the contract for building the brick smokestack on the pumping station at the Insane Asylum to Reinschmidt & Haene for $8,976. The specifications call for a concrete base.

The Missouri, Kansas & Texas Railway will erect a passenger and freight depot at North St. Louis. Including the cost of the land, about $2,000,000 will be expended for the improvements.

F. P. Boyd, vice-president and general manager Meramec Portland Cement and Material Company, states that they are now operating their new Mississippi River sand plant, as well as their Sherman Meramec River sand and gravel plant, and that the demand for both sand and gravel is excellent. At the embryo town of Boyd, near the Sherman plant, several cottages have been built, which are occupied principally by their employees.

R. A. McKinnon, sales manager Continental Portland Cement Company, reports the demand for cement being so good that their sales for the month bid fair to be the largest since the plant began to operate,

and they are running full. President Marks says this year, instead of taking his usual extended vacation, he has been obliged to be content with having it in installments.

At the office of the Union Sand & Material Company Mr. Craney is wearing the smile that won't rub off, for business is rushing—it isn't the matter of selling cement that concerns him; it is rather that of making it fast enough, and this is interfered with to some extent by the long spell of torrid weather. A cement plant is the reverse of an ice-house. The only drawback in the situation is the low price at which cement is selling in Kansas territory, though as the demand in that section is on the increase, the matter will soon right itself. It is likely that there will be difficulty in getting plenty of help, as the farmers are out for all the men they can get. Mr. Craney predicts a car shortage this fall. In Mr. Homer's department a good demand for sand and gravel is in evidence, but prices are ruling low at present.

Frank Steeg, sales manager of the Acme Cement Plaster Company, states the demand for plaster continues excellent—in fact, they are selling all they can turn out from their various factories, and the demand seems to be general throughout the country. The only fly in the ointment is that prices are still on a low basis.

Callers at the office of the Glencoe Lime and Cement Company will miss the genial welcome which Colonel Cobb hands out to them, for he is now making a vacation trip to his old home at Rockland, Me. Philip J. Dauernheim and E. S. Healey are busy handling current business, and look for a lively fall trade.

The St. Louis Gravel and Sand Company, R. G. Mincke manager, state that their new plant at Valley Falls, on the Meramec River, will be in operation in about ten days.

Mr. Cole, of the Western Valve Bag Company, says the cement industry is looking up, judging by their own business and what he hears. Also states that the cement fever is breaking out again in the latitude of Kansas City, after lying dormant for a year and a half.

The P. M. Bruner Granitoid Company is busy in sidewalk work, mostly in the tracts being opened up at the west end and other new resident sections.

The Oklahoma Sand, Gravel & Material Company is the name of a new corporation, with offices at 821-822 Victoria Building. They are erecting a plant at Muskogee, Okla., which is expected to be completed within three months. Thos. W. Ledyer has been elected president, with headquarters at Muskogee. H. C. Offenbacher is vice-president, F. A. Reisenmy, secretary, and P. T. White, treasurer, with headquarters in St. Louis.

St. Louis, Terre Haute and Coshocton, Ohio, capitalists have closed a deal for one thousand acres of land near Bismarck, Mo., which contains an extra fine quality of granite. Three quarries will soon be opened.

The Contracting & Supply Company, of St. Louis, by virtue of the fact that its stock is held exclusively by contractors, is having a goodly run of business, and Mr. Gregg, the manager, is a very busy man, and can only be seen at the noon hour at the company's office, in Odd Fellows' Building.

CLEVELAND AND NORTHERN OHIO.

CLEVELAND, O., Aug. 15.—Building in this vicinity continues to hold up well, despite the fact that the season is advancing. A number of new and important projects have been announced within the past week, work on which will be pushed to completion before snow flies. The season will be a record breaking one for the use of cement, for all the large buildings are using it in large quantities, the building code demanding rigid fireproofing of concrete for all steel frames. As a result it can almost be said that the majority of the commercial buildings are of concrete, some reinforced with steel frames.

A new building project, in which concrete will be used in an ideal manner has been made public by J. Milton Dyer, architect, who has prepared elaborate plans for the Cleveland Mausoleum Company for the erection of a splendid mausoleum of concrete and marble in Brooklyn Heights Cemetery. Contracts will be let before the month is out. The mausoleum, which is to contain four hundred crypts for the reception of bodies, will be 128 feet long, fifty-two feet deep, and thirty-five feet high. Besides individual crypts there will be compartments for families, each having ten crypts. The building will be of solid concrete construction, each tomb being built so that it can be hermetically sealed with concrete and then faced with a block of marble. The whole interior of the mausoleum is to be in marble. There will be a chapel and other funeral accessories. By a sanitary device in each crypt the body does not decay in the ordinary manner, but is simply desiccated, automatic valves relieving each compartment of noxious gases.

Plans are being rapidly completed for the new W. M. Brown Building on Euclid Avenue, opposite East Twelfth Street. It will be a stately structure, according to Architect Dyer, who is designing it. It is to be six stories high for the present, but the foundation and lower floors are to be put in to support sixteen floors, the ten extra ones to be added at some future time. The frame will be of steel, heavily fireproofed with concrete. The front will be of elaborately designed white terra cotta. There will be five large bays. The ground floor will be used for stores and the upper stories for offices. It is being built by the ex-lieutenant governor of Pennsylvania.

A $500,000 corporation will build a new plant in Collinwood, a suburb of Cleveland, five acres of land adjoining the Lake Shore Railroad having been purchased for the purpose. The corporation is headed by John A. Kling, formerly at the head of the Cleveland Builders' Supply Company, before it was turned over to the Kelley Island Lime & Transport Company some weeks ago, and Charles Miller, who was also interested in the same company. The two have formed a partnership and have opened offices in the Garfield Building, representing Best Bros. Keene Cement Company, but have also launched the new corporation as a side line. It is planned to manufacture refrigerating machinery, to be operated by electricity. It is said that by attaching a refrigerator to an electric light socket it will run continuously and keep any even temperature desired. It is expected that several new buildings will be erected at once to be used for the manufacture of the newly patented device.

The Press, an afternoon paper in Cleveland is preparing to erect a new fireproof newspaper plant at East Ninth Street and Rockwell Avenue, having purchased property for that purpose. Plans are to be prepared at once for the structure, which will be at least six stories high.

Anthony Carlin, who owns the Hotel Euclid, has had five old buildings adjoining the hotel wrecked, and Architect A. E. Sprackling has let contracts for a new five-story structure to cover the site. It will have a frontage of 100 feet and a depth of 160 feet. It will be of brick and concrete. The structure complete will cost about $125,000.

A new warehouse of reinforced concrete is being erected by Architect Paul Matzinger for the Haserot Canneries Company, on Huron Road, opposite the market house. The building will be 33 by 120 feet in size and six stories high. The contract for the work is held by the Carey Construction Company, which makes a specialty of reinforced structures.

The Henry T. Williams Company, of Cleveland, has been given the contract for a five-story building to be used as an addition to Mercy Hospital at Canton, which was originally the home of President McKinley. The new building will cost $50,000 and will provide one hundred additional rooms.

The big concrete span over Rocky River, at the western boundary of Cleveland, which has the longest concrete arch ever attempted, is over half finished, according to Schillinger Brothers, of Columbus, who are the contractors for the work. During the past few weeks the contractors have been busy erecting the giant steel staging to be used as falsework under the main arch. The four arches at the west and the three at the east end are already in place. It is hoped that the main arch will be poured early this fall, the staging being left in place over winter. This big arch is 280 feet long, 40 feet longer than any heretofore attempted. About 125 cubic yards of concrete are being set each day, although as high as 300 yards were put in place in the abutments at each end. It is expected that the bridge, which will cost about $250,000, will be completed by midsummer next.

With the opening of the new race track at Randall, just outside of Cleveland, attention has been drawn anew to the value of concrete, for the magnificent new grandstand is of solid reinforced concrete and steel.

Apropos concrete grandstands, the Cleveland Ball Club is preparing to rebuild its entire plant, using concrete for the purpose. The Osborn Engineering Company has prepared the plans for the stands, which will circle two-thirds of the diamond for the present. The old stands are to be ripped out early this fall. The steelwork has been let to the Forest City Steel Company, and the concrete work will be let later.

Williams Bros. & Morse Company have been awarded the contract for the concrete arch, to be faced with stone, which is to be erected in Brookside Park. The work will cost about $12,000. It will be at the north entrance to the park and will be faced with field or cobble stone, which is to be set by Scotch masons, who are accustomed to such work. The contract was let by the city park department. The board of education has let the contract for the annex to the Boys' School on the West Side to the Sheel Bros. Company. The work will cost about $25,000.

Akron, O., capitalists who have been backing the Summit Construction Company, of Chanute, Kan., have been notified that as a result of the issuance of liens against that company the Chanute Cement & Clay Products Company has been thrown into the hands of a receiver. The latter concern is a $5,000,000 corporation launched for the making of cement and other products. A huge cement plant at Chanute is about two-thirds completed at the present time. It also controls several other plants of a similar character. It was when the mechanics working on the plant foreclosed with liens that the plant went into the hands of the receiver. As the claims amount to only a little over $10,000, it is believed that the indebtedness will be speedily met and the receivership lifted.

Heavy concrete abutments are to be placed under the new B. & O. bridge to replace the present one near the Superior viaduct. The new bridge, which is to cost $275,000 and to be two hundred feet long, is to be erected by the Pennsylvania Steel Company, of Steelton, Pa., the superstructure of concrete being put in by Charles A. Sims & Company. It will be of the single span type.

The Youngstown Reinforced Concrete Post & Block Company has been incorporated at Youngstown, O., with a capital of $10,000. The incorporators are Lewis Stocker, Charles R. Fulkerson, Charles F. Welty, O. E. Diser and J. H. O'Lyon.

An immense amount of concrete is being used in connection with paving operations in and around Cleveland. The city authorities are trying to break their record of thirty miles of paved streets this year, and the county of Cuyahoga, of which Cleveland is county seat, is spending the sum of $2,000,000, raised through bond issues, for the paving of rural highways to the county line. In a batch of paving bids opened by the city during the past week it was found that the work is still coming well below the engineer's estimates. Contracts aggregating $107,350 were let on seven streets.

On August 7, while W. E. Baldwin, of the contracting firm of Baldwin Brothers & Graham, was going in his automobile to pay off a gang of men working on a county road paving job near Royalton, he was held up by four Italians who formerly worked for him and robbed of $1,100.

A party of Cleveland contractors were the guests of the Cleveland Builders' Supply Company several weeks ago in a visit to the works of the Lehigh Portland Cement Company at New Castle, Pa. A special parlor car took the party to New Castle, where automobiles were waiting to take them to the company's plant. Returning to New Castle, the visitors were entertained at the Lawrence Club and then taken in a special car through the residence section of the city. W. A. Fay, secretary and manager of the Cleveland Builders' Supply Company; A. Y. Gowan, treasurer; E. W. Reaugh, Norman Kelley and Henry Angel were the committee in charge of the trip. The contractors were: Henry Ferwood, George H. Brown, George H. Paul, C. F. Mullen, K. H. Pratt, W. E. Baldwin, E. Palutze, Henry G. Slatmyer, George A. Rutherford, George B. McMillan, F. Lindhorst, Matthew Noble, J. F. Aring, E. Cockrem, Frank Crockett, C. N. Griffin, J. P. Firchow, F. Campbell, Carl Anders, M. J. McGrathm, G. H. Haven and J. H. Roach. E. A. Roberts, secretary of the Cleveland Builders' Exchange, also accompanied the party.

NORTHWESTERN OHIO.

TOLEDO, OHIO, Aug. 16.—Midsummer dullness descended on Toledo earlier than usual this season, and as a result there was a marked decline in building activity during July and thus far in August. Records obtained from the building inspection department show a loss of 40 per cent for July over the same month a year ago, while the total amount for the first seven months of 1909 shows an increase of 70 per cent over the same months a year ago.

Opinion differs materially as to the outlook for fall, but, judging from the volume of work now attracting the attention of local architects, the season will not be crowded as was anticipated some time ago.

Architects are not crowded at the present with new work, but some very creditable buildings are now on the boards of fall construction. Among these are an immense general store which Tiedtke Bros. will build on Summit Street, near Adams, plans for which are now being prepared by Architect George S. Mills. The building will be a block long, six to eight stories high and about 400 feet wide at the rear, the entrance being much smaller on account of the owners being unable to purchase adjoining property on Summit Street.

The Conroy Spice Company will shortly have plans prepared for a new structure on Erie Street. It is to be five stories high, 55'x144'. It is to be of concrete construction, fireproof, as will also be the Tiedtke building.

Irving B. Hiett, associated with others, has commissioned Architect George S. Mills to prepare plans for a two-story mercantile building, to be erected on Huron Street, near Swan Creek. It will have a frontage of nearly 200 feet, and will replace a number of shacks.

The Norwood Avenue Christian Church is razing its present building prior to starting work on a brick building, plans for which are being prepared by Architects Langdon and Hohly.

Architects Bacon and Huber have just awarded the contract to John Pioch for erecting a large brick dormitory for the county commissioners, the building to be erected at Miami, the seat of the county children's home.

Architects Tschumy & Company have prepared plans for a theatre building, which is to be erected at Monroe, Mich., by H. J. Reaper, of that city.

Architects Matz & Matz are preparing plans for a new church building, which is to be erected in East Toledo.

Architect H. W. Wachter has prepared plans and will shortly award contracts for several homes to be erected along the Maumee river, south of the city.

Architect D. L. Stine is rushing work on the plans for the two new high school buildings, and bids are to be taken early in September.

Architect William H. Annin has moved his offices across the hall from where he was in the Spitzer building.

The Naval Stores Company, whose business is to extract products from pine stumps, and which now has several factories in operation, will shortly award contracts for a similar plant at Gulfport, Miss.

The Owens Bottle Company will shortly have plans prepared for a factory to be erected in Virginia. The latter company now operates two factories in Toledo.

The event of the month was the annual outing of the Toledo Builders' Exchange, which was held at Sugar Island on August 10. Sugar Island is three hours from Toledo by boat, and upwards of 500 members of the Exchange, including their families and friends, participated in the festivities of the day, which consisted of music and cards on board the boat both going and coming, a basket picnic dinner and field sports. These latter were made up of a baseball game between two teams chosen from among the members, foot races, tug of war, needle-threading contest and allied sports, which were largely participated in and which aroused a great deal of enthusiasm, causing considerable merriment. The details of the day were looked after by C. T. Lawton, assistant secretary of the Exchange, and a special committee, consisting of L. F. Burdick, S. J. Pickett, Frank Stahl and Jacob Lemle. Suitable prizes were awarded to the winners in each event, and an orchestra was provided for those who preferred dancing to the more strenuous numbers on the program. Owing to the Detroit Exchange having made previous arrangements, the two exchanges did not meet on the same day, as had been expected.

Numerous Toledo contractors are taking an active part in the preparations for the King Wamba festival, which is to be held in Toledo from August 23 to 28, Edward Kind, of the Toledo Builders' Supply Company, appearing on the board of directors.

A. H. Gallagher, general manager of the Maumee Chemical Company, spent several days in Pittsburg about the middle of the month.

By the terms of the will of James Streicher, one of the veteran street contractors of Toledo, who died some time ago, St. Mary's Roman Catholic Church is to be provided with a steeple clock. Although the only steeple in the city provided with space for such a timepiece, the empty faces have long been staring in blankness, but about the middle of October the new clock will be placed. It will have four faces, each six and a half feet in diameter, and will strike the hours on an immense bell and the quarter hours on a smaller chime.

There now appears to be some show for the Cherry Street bridge to be built in the near future. At a recent meeting, the city council voted to issue $300,000 additional bonds for the project. This will give a total of $850,000, which is estimated will be sufficient to finish the bridge complete.

The county commissioners have inaugurated a new plan which indicates that within the next few years all the principal roads leading to the city will be paved with brick, instead of being macadamized, as has been the custom in the past. Bids are being advertised for now for a small stretch of road, and bonds have been sold for $50,000 more of work, which will be done this fall. A portion of the latest bond issue will be used for stone roads or repairing old ones.

The city council has appropriated $30,000 additional for building sidewalks in the city. Already $50,000 has been utilized in this way, and property owners are showing their endorsement of the kind of work done by allowing the city to do much more than in the past.

Charles Rahm, who for the past three years has been associated with the Toledo Builders' Supply Company as city salesman, has severed his connection with that firm, and has not yet announced what future line of work he will take up.

By the Paine federal plan law, going into effect August 1, a marked change has been made in the method of conducting the city's business. Hereafter the duties of the Board of Public Service will be looked after by a director of public service, and the duties of the Safety Board by a director of public safety. George W. Tonson, former president of the Board of Public Service, has been appointed as director of service, and he will look after the city's business affairs, particularly as regards paving and municipal improvements, except such as come under the various other boards now maintained.

E. J. Eggeman, one of the principal stockholders in the Buckeye Builders' Supply Company, has been doing good work on the finance committee of Romping Day, a day set aside when all the poor tots of the city will be taken to one of the city parks and given a good time. Mr. Eggeman was a member of the Board of Public Safety, but since the reorganization under the Paine law he is devoting his attention to looking after real estate, most of his time being taken up with his own.

The France Stone Company has recently increased its office force in Toledo, and will devote more attention to looking after the trade in northwestern Ohio. Originally devoting much of its attention to Bloomville, Ohio, it has purchased property and crushers in various locations, till it now has a belt of crushers and depots which not only completely surrounds Toledo, but dots a goodly portion of northwestern Ohio.

The Fremont Board of Public Service has just awarded contracts for two new sewer systems in that city. The contract for both was awarded to Kinney and Zeigler, local contractors.

The county commissioners of Erie County, of which Sandusky is the county seat, have just decided upon the location of the new $100,000 bridge which is to be erected over the Huron river at Huron, a small city east of Sandusky. Van Renselaer Street has been named as the site, and the kind of material to be used will shortly be decided upon. This, outside of the proposed Cherry Street bridge in Toledo, is the largest bridge to be taken up in northwestern Ohio this summer.

Charles Patton, a Toledo contractor, has been awarded the contract to repair several miles of stone road in Lucas County, his bid being 99 cents a ton for material, which is one of the lowest bids received for similar work and material in a long time.

Russell & Jennison have been awarded the contract for building three miles of macadam roads in Lucas County at a contract price of $20,970.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., Aug. 20.—Activity is evident to all who take a ride over the city of Nashville and suburbs. Smaller cities and towns in the Southeast report a good outlook. Architects, contractors, supply firms with those of affiliated interests are moving about with alacrity. The first half of August has demonstrated a favorable comparison with former periods.

H. E. Richardson, manager of the Nashville Builders' Supply Company, 200 First Avenue North, states that the volume of business is very good in Nashville but that prices are much cut to pieces. They carry the Lehigh and Royal cements and manufacture lime themselves. They have the agency for the American Cement Company plaster.

Foster-Creighton-Gould Company, in addition to the Hermitage Hotel job, have in hand now grading and concrete sidewalk work of an extensive character for the Richland Realty Company. They are building railroad piers at several points in the South. Mr. Foster states that business is picking up. The limestone quarries of this company are located at Rockwood, Ala., Newsom, Tenn., and Columbia, Tenn.

The Concrete Construction Company recently incorporated in Nashville. The office is at 6 Church Street. Charles Sykes is general manager. The company makes blocks and does contracting. They are now building a four-story reinforced building for the Tennessee Packing-Stock Yard Company. They are building two residences in East Nashville and have just completed an addition to the Elks' Club in the form of a roof garden of reinforced concrete.

The Newsom Crushed Stone and Quarry Company, Vanderbilt Building, are doing considerable railroad work on contract and hope to be active on building houses later in the year. The management regards prospects as bright.

W. T. Hardison & Co., large handlers of building supplies, had the concrete floor work for the Davidson County Court House, now being remodeled in Nashville. They are also building a reinforced concrete warehouse for their own use. They carry the Louisville and Chattanooga sewer pipe. The lime kilns of the company are at Burns, Tenn.

Joseph Lightman is now operating a crushed stone yard in North Nashville.

Wilson, Ingram & Co. have sold an Aurora crusher and outfit to the Uncle Hiram Roofing Company, to be used in connection with concrete construction this company has under way at Cookeville, Tenn. Indications point to the fact that two hundred houses will be erected in Nashville during the next ninety days. Many of the structures are small but work posted at the Builders' Exchange and over the city indicates that there will be much building throughout the autumn.

Wilson, Ingram & Co. have closed a contract for an Aurora rock crusher and road building outfit for Smith county. Representatives of the County Court came to Nashville to make the selection.

Bright Brothers are now busy figuring on contracts in Knoxville and Bristol, Tenn. A. J. and John B. Bright have formed the Bright Brothers Construction Company and are prepared for all kinds of civil engineering, mining and municipal engineering as well as general contracting work. Their specialty is concrete work but they will do street paving, railroad and county road and bridge work. An office has been located at 602½ Church Street.

The Foster-Creighton-Gould Company is doing the excavating for the new Y. M. C. A. Building. The company has reached the second pier with the steel work on the Jefferson Street bridge.

Cunniff & Stone have been awarded the contract from the city of Nashville for laying nearly six miles of water pipe. The work will be completed in a ten months' limit and a cost of about $11,000. J. N. Stone has recently entered this firm. They will do concrete work also.

The plastering on the new addition to Belmont College is being done by Polk & Kannady. The new Catholic School on West End Avenue will be plastered by this firm.

Taylor Brothers were awarded the contract by the Board of Public Works here for paving the aisles of the city stables on Rolling Mill Hill with concrete.

Agerton & Robertson, 522 Broad Street, are doing considerable concrete work over town in connection with their guttering and roofing business.

The Pennsylvania Bridge Company, of Pennsylvania, is now ready to proceed with the fulfillment of its contract for the construction of the gates of locks 6 and 7, on the upper Cumberland River, having assembled the material to that end.

Bids for a $10,000 warehouse for the National Biscuit Company here are being asked for by Architect C. A. Ferguson. The building will be erected on the corner of Second Avenue and Demonbreun Street. It will be 66x100 feet, and will be of solid concrete. It is said that Chicago capital is back of the concern and that when finished, it will be one of the best buildings of this kind in Nashville.

Superintendent W. L. Sawyer, of the Tennessee State Capitol, will have laid a number of concrete walks about the Capitol grounds this winter.

Plans have been completed for the erection of a seven-story department store building for General Louis V. Clarke, at Birmingham, Ala., which is to be occupied for a term of years by Drennen & Co. Plans are also complete for the erection of the Clarke Hotel at the same street intersection, namely Fourth Avenue and Twentieth Street.

L. H. Kaplan, at Anniston, Ala., has announced that he will begin work on a three-story brick building in the Kaplan block in the near future.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., Aug. 17.—Builders and building supply firms report a better outlook in Memphis and vicinity. Work will begin on two more nineteen-story skyscrapers in Memphis November 1. These are for the Cotton Exchange and the Central Bank and Trust Company, and the territory will be getting away from Main Street, one block over to Second, each being on the corner of Madison Avenue. It is announced that the new million dollar court house will be ready for occupancy within three weeks. The Union depot project seems to have collapsed, three of the railway lines failing to agree, but a suit has been entered on the part of the city government to compel specific performance of the contract and at the same time the Tennessee Railway Commission has ordered the lines to build separate new depots, to the end of having sanitary ones, which are not had now.

J. Goldsmith Sons Company, department store, will build several reinforced concrete bridges over the court in the rear of their store connecting it with a

five-story addition. This will be handsomely equipped on the interior with mezzazine floors. The Memphis Engineering Company, Cotton Exchange Building, has the contract for the concrete bridges between buildings.

The Memphis Engineering Company is doing the concrete floor and roof contract on the De Soto Oil Company warehouse, this city. They also have several stucco residence jobs about the city and a very handsome concrete residence to build in Clarksdale, Miss.

W. P. O'Keefe & Company, 12 North Second Street, in addition to operating a cement block factory in southeast Memphis, are contracting for many homes over the city at this season.

A. W. Burdick & Company, 105 South Second Street, have been awarded the contract for the slate roof on the Sturla residence; also for the slate roof on the Gerber residence.

The Koehler Paving and Concrete Company, 68 West Court Street, has the contract for two concrete culverts to be built by the city on Walnut Street. It will also do the foundation work on a $40,000 residence, to be built here by Philip Fransiola, owner of the Fransiola Hotel.

Jno. A. Dennie's Sons Company said to ROCK PRODUCTS' correspondent, when asked about the lime, cement and building aspect here: "Trade is very good. The outlook is fine, and for the last two weeks business has been very good."

W. B. Troy, road builder and gravel dealer, Byrd Building, has been appointed to represent Shelby County at the Tennessee Good Roads Convention called by Governor Patterson for Nashville in September. Mr. Troy is regarded as an authority on this subject.

The property belonging to the Lee estate, on Monroe Avenue, Memphis, at the crossing of the bayou, will be improved by the building of a concrete culvert. J. A. Omberg, Jr., has the contract. Several pieces of property abutting on the bayou have been improved in this way recently, making property which was before practically valueless worth many thousands of dollars. Mr. Omberg has prepared plans for arching the bayou on Poplar Avenue, near the City High School.

The Illinois Central gravel pits at Gravel Switch, twenty-five miles from Paducah, Ky., on the Louisville division, have been opened, giving employment to about fifty men. Heretofore the company has worked the pits, but this year it has let the job to Contractor Hawkins, of Memphis. The gravel is used in ballasting the roadbeds.

The Metropolitan Construction Company, of Kansas City, has begun its Memphis contract for paving Lauderdale Street from Mississippi Avenue southward. Lauderdale is to be paved with other material, but the asphalt contract will cover nearly 18,300 square yards, and will cost approximately $50,000.

Under the Memphis subway ordinance which has been passed by both branches of the legislative council, nine subways and one viaduct must be constructed by the interested railroads. The viaduct at Memphis Boulevard and the subway at Rayburn Boulevard must be completed within one year from time of commencement. All subways otherwise provided for must be completed by January 1, 1912, and work must be commenced within ninety days. Judging by the expression of interested attorneys, the railroads will resist the construction of these improvements, and are hopeful to hold off at least a year longer, pending decision of the Supreme Court in the case of the city against the Southern for the construction of a subway on Lamar Boulevard.

Meers and Dayton, of Chattanooga, Tenn., have been awarded the contract for the erection of the addition to the Memphis street and railway power house, on Broadway Avenue. The contract calls for the completion of the three-story addition within four months. Including the machinery, which will be installed as soon as the building is completed, the cost will be about $100,000.

The Memphis city council last week awarded several important city contracts on paving. These were awarded as follows: North Third Street work to Memphis Asphalt Company, $4,480; Seventh Street Memphis Asphalt Company, Washington Avenue from Front to North Manassas, Metropolitan Asphalt Company, $50,160; Waldron Boulevard from Poplar to Union Avenue, Memphis Asphalt Company, $18,665; South Wellington Street, Memphis Asphalt Company, $8,636.

At Greenville, Miss., the board of directors of the Delta Fair Association has awarded the contract to J. J. Harty, of Greenville, for the erection of the main exhibit building. It will cost $7,000.

Forrest and Dupree at Brownsville, Tenn., are erecting a new building for their store and it is reported will carry a line of builders' supplies.

ROCK PRODUCTS' correspondent visited a few days ago the town of Erin, Tenn., where are located some of the original lime-producing concerns in the state. E. W. Rauscher has works here that produce lime from a rock that analyzes 99 per cent carbonate of lime.

V. R. Harris is one of the pioneer lime producers at Erin and holds some valuable stone properties and manufactures lime every work day of the week as he has for twenty years or more. He has his own cooperage interests and ships everywhere. He states that a market is readily found.

At the neighboring point, Palmyra, Tenn., the Palmyra Lime Company owns some fine stone bluffs and is making a good quality of lime.

W. R. Laseter, dealer in lime, cement and building supplies at Paris, Tenn., states that business is improving in that interior city. The municipality is doing some paving work, new homes are going up and backing all of this the crops are good in that district.

Slayden & McNabb, of Waverly, Tenn., are building a beautiful two-story concrete block residence for A. P. McMurray. It stands on the principal street of Waverly. The contractors manufacture their own blocks.

Charles W. Little, of Caruthersville, Mo., has been awarded the contract to build several miles of good novaculite streets in Fulton.

The Selden-Breck Construction Company, Tennessee Trust Building, Memphis, is doing the work on a $35,000 brick addition to the Wabash Screen Door Company, Memphis.

The National Plaster and Material Company will let the contract at once for a manufacturing plant which will be located on Nichols avenue at the intersection with the Union Railway tracks. The company was recently organized, with E. M. Forbes as president, and J. M. Howard as vice president. The company will deal in plaster, roofing material, plaster board, pottery clays, etc.

BUFFALO.

BUFFALO, N. Y., Aug. 17.—Improvement is more manifest this month than heretofore noted in some time. Many new buildings are being erected and much construction work requiring the use of cement and other building supplies is being done here. Most of the material used in these jobs is being supplied by the local trade and the majority of dealers report business very good. Much new business is in sight and the local dealers are anticipating a heavy future demand.

Business is reported to be very good and an excellent future anticipated by the Buffalo Paragon Wall Plaster Company.

The Thorn Cement Company, of this city, report business to be good and expect it to continue so for some time.

M. A. Reeb states that his firm is very busy, and has much business in sight. They are supplying cement and other building materials for many of the buildings now being erected here.

The Delavan Sand Company has just filed papers of incorporation with the county clerk of Buffalo. The concern has a capital stock of $25,000.

Word was received here today that Contractor J. B. Hurley, of Fredonia, N. Y., located near Buffalo, has been officially notified by the State Department at Albany, N. Y., that his was the lowest bid for the construction of a reservoir to be erected at the State asylum at Gowanda, N. Y. The reservoir is to be built of reinforced concrete.

About 25,000 feet of concrete sidewalk will be laid shortly in Salamanca, N. Y.

The Central Ice Company, of Buffalo, will build an artificial lake near Darien, N. Y. The lake will be made by erecting a reinforced concrete dam 250 feet long.

Fort Erie, Ont., Beach, an amusement resort near Buffalo, will be improved for next season. A reinforced concrete dock will be among the new features.

The contractors who are building the new Black Rock ship lock for the Government here at a cost of nearly $2,000,000 are making good progress. Work on the concrete walls was stopped for a time by an inrush of water. The contractors later, however, were able to go ahead with the concrete work. Cullen & Friestedt, of Chicago, have the contract.

New York State Engineer Williams announces that the plans for the new $1,500,000 lift in Lockport, N. Y., to replace the present ten locks, have been completed and filed with the barge canal advisory board of engineers. The locks will be the largest and finest in the world. Much concrete will be used on the contract.

George Hucknall, son of Contractor Hucknall, of Albion, N. Y., was recently caught in a stone crusher and seriously hurt.

Much concrete is being used in the construction of the plant of the Frontier Iron Works, of Buffalo.

An immense concrete dock is being built at Port Credit, Ont., by Haney & Miller. The structure is 1,500 feet in length.

The German Rock Asphalt & Cement Company has a contract to repair the asphalt pavements in Buffalo.

It is said that the Union Stockyards Bank, of Buffalo, expects to establish a branch at Broadway and Fillmore Avenue in this city. Plans for the new building call for a structure of concrete and granite.

It is reported that the breakwater at Port Arthur, Ont, will be extended. It is expected that much concrete will be used in the proposed contract.

The residents of Bolivar, N. Y., including several women, recently voted against a plan to pave Main Street in that village.

The Long Sault Development Company, of New York, and the St. Lawrence Power Company, of Canada, are considering a plan to build a mammoth power plant along the St. Lawrence River at the foot of the Long Sault rapids. If the plans are carried out much cement will be used in the contract. The scheme involves the building of a dam over four thousand feet in length from the lower part of the Long Sault rapids to the upper end of Barnhart's Island, to steer the water of the Long Sault in the right direction of the powerhouses; the construction of three powerhouses, a huge lift lock, the straightening out of various channels of the river and many other feats of engineering which will probably involve the expenditure of $20,000,000 during the period of constructive work.

The cement abutments and approaches of the Elk-Michigan Streets viaduct, which this city is building, have been completed.

Joseph I. Keefer, of Washington, D. C., who was a recent visitor in Buffalo, is advocating a plan to build a huge stone or concrete wall near the brink of Niagara Falls, thus connecting both falls and making only one continuous stream.

A report has reached here that plans have about been completed for the consolidation of all the cement companies in Canada, under a capitalization of $25,000,000. The merged companies will be known as the Canadian Consolidated Cement Company.

Some opposition has been raised to the plan being considered by the International Waterways Commission to build a mammoth concrete or stone dam across the Niagara River here to raise the level of the Great Lakes. The commission has taken no action and has made no recommendations.

A report from Montreal, Canada, says the Canadian Pacific Railroad Company has completed great tunnels near Field and Hector, Canada. Nearly 750,000 yards of virgin rock was excavated from the tunnels. James A. Macdonell is head of the Vancouver firm of Macdonell, Gzowski & Company, who had the contract for constructing this great work.

Buffalo will spend about $150,000 in sewer work in Black Rock harbor.

The members of the Buffalo Builders' Exchange recently held an enjoyable outing at Olcott Beach, a beautiful summer resort near here.

Bids for improving the federal building at Niagara Falls have been rejected by the Government.

Architect Robert Fayfield has been directed to draw plans for buildings for the Niagara Electro Chemical Company, of Niagara Falls, N. Y.

The S. B. Nye Company, which will erect buildings and develop property, has been incorporated in Albany, N. Y. The new concern will operate principally in Buffalo.

The Nicholas School Construction Company, of Buffalo, with capital of $200,000, has filed articles of incorporation. Raymond K. Albright, Charles Wolsley and Louis L. Babcock, of Buffalo, are the directors.

Architect Martin C. Miller, of Buffalo, has been awarded a contract to prepare plans for the new Emmanuel Baptist Church of Buffalo. The structure will cost about $35,000.

It is reported that the New York Central Railroad will make improvements at Utica, N. Y., at a cost of $1,500,000. A new passenger station and other structures may be built.

MINNEAPOLIS AND THE NORTHWEST.

MINNEAPOLIS, MINN., Aug. 18.—The building season of 1909 bids fair to go down in history as one in which the activity was great, but was not dissipated by having to wait unduly for materials, or from interferences by strikes. There has been work enough for all, and there has been less aimless rushing about than common under these conditions. Labor has been steady at most points in the Northwest, although a few instances of strikes and threats of strikes have occurred from time to time.

Prices of materials are strengthening as the season advances, and it is probable that there will be further

advances. Lumber has shown several changes, and building iron and steel are stronger and are working upward. Nails are higher, and builders' hardware has joined the upward trend. Contractors are also figuring with an eye to profit, more than they were earlier in the season, when there was a wild scramble after every job, and little attention paid to profit, beyond a small margin. But the list of bidders is by no means as formidable as it formerly was this season, and the figuring is not so close. There is plenty of work and it is not necessary to cut down until all the profit is gone.

A recent decision of the Minnesota Supreme Court hands a body blow to the profession of the ambulance chasing lawyers, holding that an arrangement with these personal injury lawyers to divide the anticipated recovery of damages is contrary to public policy, and therefore illegal. Inasmuch as these shyster lawyers have been the bane of the existence of every employer of labor, seeking to work up a case where an injured workman would be willing to arrange for a settlement direct, and without ill-feeling or annoyance to either. They do all in their power to cause strife and irritation and ill-feeling and enmity and animosity to develop toward employers, to the end that they may start an action and secure their liberal portion of the damages which may be secured.

R. E. Marshall, an architect from Iowa City, Iowa, has opened an office at 1201 Hennepin Avenue, Minneapolis.

A new building code is under consideration in Minneapolis, which proposes to increase the requirements in many respects. The small moving picture theaters which have developed to such an extent of late, come in for regulation, since they are a fruitful source of fire. The light machines are to be placed in fireproof booths. Ample exits are required. Concrete construction is brought down to date and an effort is being made to fix uniform requirements with St. Paul, and the department of building in St. Paul has been approached in the matter.

Boyer, Taylor & Tewes compose a new architectural firm in St. Paul, with offices at 400 Endicott Building.

The Minneapolis Builders' Exchange held a picnic at Lake Minnetonka, Saturday afternoon, July 31. Arrangements were such that those who wished could have a basket picnic lunch and those who did not care to do that had arrangements made in advance for dinner at the hotel at Tonka Bay. The event included the afternoon and evening.

The William Pierce Cowles Company, of Minneapolis, designing engineers, have moved to larger offices at 923-24-25 New York Life Building, Minneapolis.

The new $200,000 grand stand is being rushed to completion at the Minnesota State Fair grounds, between Minneapolis and St. Paul. The building is of reinforced concrete construction, and will require 9,000 barerls of cement, 1,100 tons of steel and 10,000 yards of concrete. George J. Grant, of St. Paul, is the contractor.

C. A. P. Turner, engineer, of Minneapolis, has just issued a very complete book on concrete steel construction. It is in twenty-two chapters, and touches all features of reinforced concrete.

Building permits in Minneapolis for July amounted to $1,001,460, as compared with $945,485 for the same month of last year.

St. Paul permits for July were $745,498, as against $778,544 for the same month of last year.

The H. N. Leighton Company, of Minneapolis, general contractors for the Roman Catholic pro-cathedral, Minneapolis, have poured an immense reinforced concrete floor recently for the building, aggregating 23,000 square feet of floor space. The auditorium is 80x150 feet, and the dome area has a floor space 80x80 feet. The panels are 20x24 feet, between girders, 40 feet long. William Pierce Cowles is the designing engineer.

One of the most important buildings projected in the Twin Cities this season is a new store and office building for Sixth Street and Hennepin Avenue, Minneapolis, to be erected by Congressman John E. Andrus, of Yonkers, N. Y., Thorpe Brothers being the Minneapolis agents. The building will be occupied by the Plymouth Clothing House, for the ground floor, and will be 237x187 feet ground size, ten stories high, though it may be run to fifteen, with a basement and sub-basement. The exterior walls will be of brick with terra cotta trimmings, with reinforced concrete construction. The estimated cost of the building is $1,250,000. The plans will be out about September 1, and the building is to be completed next summer. Long, Lamoreaux & Long, architects, Minneapolis.

John Gorrien proposes the erection of a fireproof bachelor apartment building at Eleventh Street and Hennepin Avenue, Minneapolis, to cost $75,000.

The Minneapolis and St. Louis Railway has started work on new shops at its Cedar Lake shops, Minneapolis, to cost $50,000.

The H. N. Leighton Company, of Minneapolis, received the general contract to erect the new wholesale dry goods warehouse in Minneapolis, for Tibbs, Hutchings & Co., of St. Paul. Cost, $200,000.

The Segerstrom Piano Manufacturing Company, of Minneapolis, announces the intention of erecting a new factory to cost about $125,000. Lindstrom & Almars, architects, have prepared the plans.

T. B. Walker, of Minneapolis, and H. J. Burton, of the same city, have arranged with the Schubert Theater Company to erect a handsome theater building at Seventh Street and First Avenue North of fireproof construction, to cost $200,000.

Finch, Van Slyck & McConnville, wholesale dry goods dealers, St. Paul, propose the erection of a handsome new wholesale house next season to cost $250,000.

The Northwestern National Life Insurance Company, of Minneapolis, has let the contract to Pike & Cook for a four-story extension to the company's office building at Eleventh Street and Nicollet Avenue, filling in a corner between two wings of the building. The foundations will be strong enough to carry eight additional stories.

Wyman, Partridge & Co., of Minneapolis, wholesale dry goods, will erect an addition to the warehouse, Fourth Street and First Avenue North, to be the same height as the present building, seven stories, 66x165 feet, reinforced concrete construction. Cost $150,000. Kees & Colburn, architects.

The Minneapolis Motor and Truck Company is having plans prepared by William M. Kenyon, architect, of Minneapolis, for a set of buildings, two stories, reinforced concrete or cement block construction. The main building will be 165x275. Cost of the plant and machinery, $100,000.

The Minnesota Moline Plow Company, of Minneapolis, is having plans prepared by Long, Lamoreaux & Long, architects, of Minneapolis, for an addition to its warehouse at 401-7 North Third Street. The addition will be 80x100 feet, five stories, pressed brick and heavy mill construction. Cost, $70,000.

A. J. Blix, an architect, of Minneapolis, has plans for a brick and stone family hotel building to be erected at Fifteenth Street and Vine Place. Cost, $15,000.

Bids for the erection of the handsome new technical high school for Virginia, Minn., will be opened August 27. Cost, $125,000. C. E. Ball, Tyrie & Chapman, architects, Minneapolis.

Evenson and Madsen, of Minneapolis, received the general contract for the erection of the Bloomington Avenue Methodist Episcopal Church, at Thirty-first Street and Sixteenth Avenue South, in Minneapolis, at $17,000. Fremont D. Orff, architect, Minneapolis.

The P. M. Hennessy Construction Company, of St. Paul, has been awarded the contract for the exterior walls above the foundations up to the dome for the new Roman Catholic cathedral in St. Paul. It covers the labor, the stone being furnished by the architects. Their bid was $177,000. E. L. Masqueray, architect, St. Paul.

Cameron & Co. received the general contract for additional building at the Crex Carpet Company plant in St. Paul at $29,800.

LOUISVILLE.

LOUISVILLE, KY., Aug. 17.—Although the official record shows that building in Louisville slumped badly during July, with a loss of 39 per cent, contractors and others dependent upon building operations are apparently not cast down. That they have no reason to be is evidenced by the number of buildings for which plans and specifications have been announced, and the volume of the work which the architects are getting ready for. In practically every office where drawings for buildings are made there is an air of activity that is decidedly cheerful, and that has made the building contractors, the cement men and others interested smile, in spite of the hot weather. Referring to that building report, the amount represented by the permits taken out was $278,967, compared with $460,567 for July, 1908.

Some of the work that is being figured on just now includes the heating, lighting and power plant of George G. Fetter, plans for which were drawn by D. X. Murphy, and which will be built of reinforced concrete and steel at a cost, including machinery, of $200,000; the auditorium of the new State Normal School at Bowling Green, to be built of brick and stone, Brinton B. Davis, architect; the new Country Club, to be erected out in the county at a cost of $100,000; the new building for the Mengel Box Company's office, to be built of brick and concrete. The normal school building is the first of a group to be erected at Bowling Green, and as $800,000 was appropriated by the state for this work, it means a good deal to the builders. Joseph & Joseph, local architects, are drawing plans for the Solomon office building at Helena, Ark. It is to be five stories high.

The subcontracts for the Avery plow manufacturing plant in South Louisville have about all been let. The Lehigh Cement Company, through its local representative, the Utica Lime Company, was awarded the contract for cement, while the Louisville Bridge & Iron Company got the steel work. E. E. Peterson, of Louisville, got the concrete work, and the Frey Planing Mill the mill work. Fred Leeser was given the contract for the brick work. The general contract is held by the Westlake Construction Company, of St. Louis, which got it at $340,000.

Speaking of the Lehigh Cement Company, it has been getting a good many juicy local contracts of late. The Avery contract will take about 15,000 barrels. They were also given the contract for the coagulating basin of the water company, as stated last month, and are getting their share of the sewer work. The demand for Lehigh has caused the intimation that the price may be raised shortly.

The Kosmos Portland Cement Company is finding business just now pretty active. The demand in Kentucky, Tennessee and Arkansas is especially good. L. C. Parnell, one of the company's best salesmen, was in charge of the sales office when the ROCK PRODUCTS representative called, Sales Manager C. M. Timmons being at that time in Nashville. Vice-President Charles Horner is spending his vacation with home folks in Philadelphia. The mill, which has a larger capacity than the one which burned about a year ago, is running full tilt.

The Kosmos people have appointed Owen Tyler, who has been specializing in building supplies, as their local agent. Mr. Tyler has opened a warehouse at Jackson and Burnett Streets, and during his first week as agent sold 25,000 barrels for use on the sewers here. He said that he is selling in all quantities, from a barrel to a boatload. Mr. Tyler, by the way, heads an independent ticket which has been put in the field for the municipal offices. He is candidate for mayor. He was the Democratic nominee for mayor two years ago, but was defeated. He is considered an exceptionally strong candidate.

Superintendent Henry S. Gray, at J. B. Speed & Co., said that the market is not very active at present, and that there are no very large prospective jobs. One of the ways in which the company's output of hydraulic cement is being used up is in the postoffice work through this part of the country. Mr. Gray said that the government has accepted numerous samples submitted, and that as a result a great many of the postoffices in Kentucky, Tennessee, Indiana and Alabama have been built with hydraulic cement. Only a small amount is being consumed now, however. Mr. Gray has gone to Chicago on business.

Webster Gazlay, associate engineer of the Board of Water Works, is still busy with the new filter plant, and has not yet resumed his duties with the National Concrete Construction Company. A local daily recently published a thrilling account of how Mrs. Jacob H. Ohligschlager escaped death in a runaway accident, saving herself and her baby by a daring leap. Mr. Ohlingschlager, who is with the National, said that the accident did not amount to much, though his wife sustained a sprained ankle.

The Central Concrete Construction Company reported that while business is good, there is nothing exceptional about it, and most of it consists of small work, such as pavements and cellars. They use Speed's Portland cement altogether. Prospects are good for fall trade, as many inquiries are being received.

Vice-President Streicher, of the National Roofing and Supply Company, said that roofing is quiet, but that a great deal of concrete work is being done. Mr. Streicher, who was formerly a secretary of the company, is now vice-president and treasurer. Other changes in the company, he said, would be made public later on.

J. H. Ingram, of the Ingram Roofing and Asphalt Company, said that roofing is especially active, and that he has been devoting most of his time to that, on account of the low price of cement. Some of the big jobs he has secured in the roofing line lately are the Kentucky Wagon Works, which will use five hundred squares; the new building of the Olds Motor Works, on Fourth Avenue, and a big tannery in the west end. He uses asphalt in most of his roofing. The outlook is all right, he said.

Advertising pays, according to John Campbell, of the Kentucky Wall Plaster Company. This is about the only wall plaster producer in the city which does any newspaper advertising, and some effective exploitation of "Diamond" plaster is being done. The result is that business is rushing and the plant is running to capacity, although, as Mr. Campbell admitted, they still have to go after the business. There are three wall plaster companies in Louisville and two just across the river. Little outside plaster is used in these parts, therefore.

Business with the Southern Wall Plaster Company,

one of the newer companies here, is good. The revival in business is stimulating trade, they said, and the prospects are for a heavy fall business.

For the first time in a long while, the Ohio River Sand Company is not able to fill all the orders given it. Owing to the low stage of the river, the barges have not been able during the past few weeks to get to the sandbars, and the company has been selling out of its surplus in the yard. This is rapidly going down, and the contractors on the newer work are calling for more sand every day. A breakdown of one of the diggers also prevented as much sand as needed being gotten out.

Business with the Louisville Fire Brick Works is not only showing a decided improvement over last year's, but each succeeding month of this year is making a gain over the last. Local business is fair, while the demand from the country at large has been exceptionally good. The Northwest is buying in volume, it is reported.

Burrell & Walker said that the demand for fire brick is picking up considerably and that the improvement is due to the general awakening of business all over the country, especially in the building trades. Local business is very good, it was stated. There is nothing of unusual size being done, but a volume of small orders is coming in.

S. F. Troxell said that while business is not very lively, some nice roofing contracts are being made, and the demand for steam pipe casings is also picking up. Mr. Troxell's brother, who is a cement contractor, said that competition is so close here that it is hard to get much business of a profitable character. The cry of keen competition is heard pretty frequently, not only among the contractors, but when one strikes the cement people, too.

Business with the P. Bannon Sewer Pipe Company is fair, and a good deal of pipe is being sold the city just now for the smaller sewers which are being built. The completion of the big trunk sewers, it is believed, will result in a great demand for lateral connecting ones, and that ought to help the sewer pipe men a whole lot.

Some of the cement people are sending out rather interesting novelties. The Lehigh company is getting out a cement match holder, while the Whitehall Portland Cement Company, of Philadelphia, has sent several Louisville contractors paper weights made of cement and in the form of a barrel—representing Whitehall output, of course.

W. E. Burk, chemist for the Board of Waterworks, has resigned to go with a new cement company which is being formed for Mexico. It is known as the Toltec Portland Cement Company and will have a plant at Tula, Mex. Mr. Burk is now in Mexico City. It is understood that the new company succeeds the Hidalgo Portland Cement Company, in which several Louisville people were interested. This company did not manufacture cement, however, but had considerable land holdings suitable for the production of cement. These holdings have been turned over to the new company, according to information given out here. Mr. Burk was succeeded here by David Morey, of Harrisburg, Pa.

Announcement has just been made of the purchase by the Illinois Central Railroad of several buildings at Seventh and Main Streets and of the intention to spend $700,000 here on a new depot and other equipment at Seventh and the river, to take the place of that destroyed by fire last fall. The details of the plans for the new depot have not been made public, but it is said that it will be one of the finest in the country, and will be built of brick and stone.

The Louisville Brick Company, which is associated with the Bannon properties, has been enjoined from digging clay near its plant in the West End, at Thirty-eighth and Rudd Streets, because the city has made a claim that the property which the brick company is using is really composed of dedicated streets which have never been made. It is said that the streets were dedicated by the old town of Portland in 1812. The defense of the company is that the statute of limitation applies, and that as they have held the property for that purpose for many years there is no legal prohibition against continuing to do so. A temporary injunction was granted by Judge Kirby, in the Circuit Court, but it was indicated that there would be no final injunction granted. The points raised are new.

T. B. Jones & Company, of St. Louis, have been awarded the contract for the construction of the western interceptor by the Louisville Sewer Commissioners. The sewer extends a distance of 3,500 feet and will cost $50,000. F. G. Mortimer, of Chicago, has been awarded a contract for the construction of section D of the northwestern sewer, which is to cost $50,000. The work on the southern outfall sewer is being pushed, and it will probably be completed before the year is over. The Sewer Commission, in answer to criticisms, has issued a statement that no foreign labor is being imported to work on the sewers now being built.

J. W. Palmer, of New Albany, was awarded a contract for a sewer in that city. It will cost $2,873.

Specifications for the new Tyler Hotel, at Third and Jefferson Streets, are to be completed immediately by McDonald & Dodd, the architects, and work will be commenced soon with the letting of contracts, according to Mr. Tyler's announcement. The building will cost $200,000. It will be finished by April 1, 1910, it is said.

The new building ordinance, which it is said was passed in order to permit the erection of the new Gaiety Theater without changing the plans, has been passed and is now a law. The length of the lobbies was the stumbling block which necessitated a change in the law. The Gaiety owners have taken out a permit for the building under the new law, and it is now being completed. The building of the theater developed into a hot political fight.

The Carrollton Leaf Tobacco Warehouse Company is to build a concrete warehouse for the sale of leaf tobacco . It is to be erected at once.

The G. A. Whitehead Company, of Owensboro, has launched a concrete barge, said to be the only one of its kind. It is 60 feet long and 16 feet wide, and draws about a foot of water. It has aritight compartments. It is reported that the Government has been interested in that type of vessel.

Brick plants are having their troubles, it seems. The Greathouse Brick & Tile Works, near Lewisport, Ky., suffered the loss of its plant, machinery valued at $5,000 being burned. Fire destroyed the plant of the Owensboro Sand, Lime & Brick Company, causing a loss of $30,000. The workmen at the Haldeman, Ky., brick plant have gone on strike, and guards have been employed to prevent violence being done by the strikers.

Word has been received from Washington that P. J. Brennan, a contractor of great note, died there recently. He was known here and had been associated with W. J. Oliver, of Knoxville, Tenn.

The Gray Construction Company has been organized here with a capital stock of $15,000. A general construction business will be done by the company. The incorporators are W. D. Gray, of Louisville; Waller P. Fubank, of Glasgow, and Arthur L. Newman, of Bradstown Junction.

At a meeting held at the Builders' Exchange between the subcontractors and the general contractors it was agreed that more fraternity and coöperation is needed between those two branches of the building trade. Cal Thomas expressed the general sentiment by declaring that if prices were higher there would be more building, and that everything had progressed except the contracting business. It is likely that the subcontractors will form an organization.

THE WEST COAST.

SAN FRANCISCO, CAL., Aug. 17.—According to the record of building permits, building has not increased as greatly this summer as was expected, the records showing very little improvement since early in the spring. July is usually expected to be a busy month, but the permits show a valuation of only $2,154,999, over half a million less than either May or June. Many structures of considerable magnitude have been planned, and some of them figured, but contracts are rather slow to come out. Building activities seem to have fallen behind somewhat in other coast cities also. In San Francisco, however, the use of concrete construction seems to be reviving again, and this material is employed in some of the largest structures now being erected.

Notwithstanding the apparent quietness in building operations, the California cement industry is thriving as never before. The output is considerably larger than in the past, and with the quality holding up to a high standard at all the mills, all the coast product is marketed with little difficulty, while prices are steadily maintained at a profitable level.

The consumption of cement is gradually increasing, with the commencement of large public works and a general revival of industrial development, and it is hard to see how the coast can ever require a smaller quantity than at present.

The rock crushing industry is also making rapid progress. The good roads movement has been energetically taken up all over the state, and the people of this territory have only begun to learn the manifold ways in which this material may be employed. With the increasing demand, large installations of rock crushing machinery have been put in during the last few months, and the outlook is good for a further increase of equipment in this line.

One of the largest installations has been put in by the Natomas Consolidated of California, at Fair Oaks, near Sacramento. The plant made a trial run last week and was found to be in excellent shape, and regular operation will begin in a few days. This is the second crusher installed in that vicinity, to work on boulders turned up by the company in its gold-dredging operations. It has a capacity of 50,000 tons a month, and is said to be the largest west of the Mississippi, having cost about $200,000. It is equipped with four large crushers of the Farrell type, in addition to three sets of rollers. There is a large market for the material in that vicinity, for use in roads, concrete buildings, and several large concrete lined railroad tunnels. The company also expects to put in a plant for the manufacture of concrete pipe.

The Pacific Portland Cement Company has announced a 50 per cent increase in its monthly dividend.

H. D. Connick, of the San Francisco engineering staff, has just issued a reply to sensational statements in the local press this week, to the effect that in a test of seven concrete cisterns built for fire protection, four would not hold water. Connick says the cisterns are not yet finished, and have merely had the preliminary test made by the contractors, in order to repair any leaks that may exist. All the cisterns but one have actually been found perfectly tight, and the single leak can easily be closed. A number of contracts for additional cisterns were let last month, and the work is progressing rapidly.

Several large reinforced concrete sewer contracts have been awarded recently, and bids have been called for on new work estimated at $401,000.

An agitation is on at present for the use of concrete curbing instead of granite on the outlying streets of San Francisco, as it is claimed that the concrete curb can be laid for 30 cents a foot, while granite costs $1. Commissioner McGilvray, of the board of works, is opposed to the change on the ground that it would be difficult to compel the use of proper materials. The granite quarry interests of Placer county, California, have called a general meeting to discuss the matter, as they claim that such a change would seriously affect their industry. All the street curbs in this city have been of granite for many years, but concrete is giving satisfactory service in many of the neighboring towns.

The good roads committee of the Contra Costa county, California, land owners will meet next week to formulate plans for a $100,000 bond election for the improvement of the county's roads.

The metal waste water and irrigation pipes at the Spreckels sugar refinery at Salinas, Cal., are being replaced with concrete pipes.

A large concrete hall of records is being built at Eureka, Cal.

The Mount Shasta Volcanic Hollow Tile and Cement Company, of Igerna, Cal., commenced operation last week, making brick and tile. The company has a large quarry of volcanic rock, several grades of gravel and sand, and a good cement material which will probably be developed later.

The E. B. & A. L. Stone Company, operating crushers in Solano and Alameda counties, has commenced a damage suit against the Southern Pacific for about $190,000, on account of alleged violation of a freight rate agreement and failure to provide sufficient cars.

The Marysville Sand, Cement and Block Company has secured a large site at Marysville, Cal., and will carry out considerable development work in the near future. The company is shipping large quantities of sand to various parts of the state.

The Victor Portland Cement Company has arranged for a site for its proposed plant in Los Angeles, and will not build at Victorville, as was formerly intended.

The Sunset Plaster and Cement Company is about to start work on a plant with a capacity of 200 tons daily, for the manufacture of wall plaster, plaster of paris and cement, at Los Angeles. The company was recently incorporated by T. Mahoney and associates, with a capital of $200,000, and has purchased a large deposit of gypsum in Ventura county.

A large amount of basalt block paving work is now being done in San Francisco, and the results obtained with this material on the downtown streets are better than ever before. On the heavily traveled streets the blocks are carefully laid and grouted with gravel and asphalt, and where this pavement has a concrete foundation it would be hard to improve.

A contract was recently placed for the construction of several miles of cement sidewalks and curbs in the town of Burlingame, Cal.

The Healy-Tibbetts Construction Company has taken the contract for the completion of Section 11 of the crushed rock and concrete seawall in San Francisco.

A new Masonic temple of reinforced concrete, to be some eight stories high and cover a lot 120x160 feet, is planned at Sacramento, Cal. It is expected to cost about $500,000.

A lime kiln belonging to Charles Christy and C. J. Driscoll, near LaGrande, Ore., was destroyed by an explosion followed by fire on July 11.

The Portland Cement Company, of Portland, Ore., capitalized at $2,500,000, is planning to establish a large manufacturing plant at Oswego, Ore., where it owns a large tract of land. The company has a large deposit of lime rock near Roseburg, Ore., within easy distance of the railroad.

Kellastone, a pure white plastic stone, made by the Sanitary Construction and Manufacturing Company, of Terre Haute, Ind., is giving universal satisfaction. It can be applied on wood or metal skeleton frame, on inside and outside walls. The entire porch can be made of it, even the steps and columns. The Sanitary Construction and Manufacturing Company claim for it that it is waterproof, fireproof and acidproof. When made of this material, they state, the house will be without a crack or crevice; that the floors and base will be one piece, and that twenty-five shades or colors can be selected from. No carpets are necessary, a rug center with colored border, making the handsomest orom imaginable. Architects, they say, can let their fancy run wild.

They propose to establish branch factories throughout the United States. They solicit correspondence, and are more than willing to give all and full particulars.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion .....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

EMPLOYEES WANTED

WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

WANTED

Experienced wall plaster salesman for New York and New England territory. None other need apply. State references and salary. Address
BOX 707, care ROCK PRODUCTS.

MATERIAL FOR SALE

FOR SALE.

Brass letters and figures to imbed in cement walks, curb blocks, etc.; reversed letters and name stamps to make impressions in cement.
Send for price list.
H. W. KNIGHT & SON, Box R, Seneca Falls, N. Y.

EMPLOYMENT WANTED

PLASTER MILL SUPERINTENDENT

desires to make change in position; thoroughly conversant with every detail of plaster business; competent on machinery and construction.
Address BOX 711, care ROCK PRODUCTS.

MACHINERY FOR SALE

GAS KILN.

For sale, sole patent rights for U. S. Has burnt lime with 3 cwts. of coal per ton. Price $20,000. Offers considered. Replies to R. Booth, M. I. M. E., 110 Cannon Street, London, E. C.

NO. 1 STURTEVANT MILL,

New, never used, for sale at cost f. o. b. cars Genoa, O.
Address CRAWFORD & TARBELL,
46 Colonnade Bldg.,
Toledo, O.

INSTRUMENTS FOR FULL CONTROL.

For sale, brand new, S. W. Pan Standard Calorimeter with carbon and sulphur outfit; electric ignition and motor for the determination of the heating value of fuels, cheap. Also Fery Radiation Pyrometer in first class condition; has been used enough to prove its value.
Address S. W. PEPPEL, Cedar Rapids, Ia.

CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap.
R. P., BOX 2, Sta. A., Cincinnati, O.

ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.
Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.
Pumps, Heaters, Tanks, Sawmill and General Machinery.
Write for our prices on your requirements.
THE RANDLE MACHINE CO.,
1745 Powers St., Cincinnati, O.

FOR SALE

2—100-inch fans or blowers.
1—110-inch fan or blower.
Water jacketed bearings, pulley drive, upward discharge. Made by the American Blower Co., Detroit, Mich. Used only a few weeks; in good condition. Will be sold at a bargain. Address
PENINSULAR PORTLAND CEMENT CO.,
Jackson, Mich.

FOR SALE

One Allis-Chalmers portable No. 1 Style D Gates crusher, with 25 H. P. Fairbanks & Morse gasoline engine, all belting, shafting, pulleys, circulating tanks, pipe fittings; painted and erected on 40,000-pound flat car. Present location, Leesport, Pa. For further information address COMMONWEALTH ROOFING CO., 17 Battery Place, New York, or Warren-Ehret Company, Land Title Building, Philadelphia, Pa.

FOR SALE.

One Allis-Chalmers, Portable No. 1, style D, Gates crusher, with 25-h.p. F. & M. gasoline engine, all shafting, pulleys, belting, pipe fittings, painted and erected on forty thousand pound flat car. Address
BOX 713, care ROCK PRODUCTS.

BUSINESS OPPORTUNITIES

FOR SALE

A complete concrete block plant, including a Perfection 100-ton press with various size dies, mixing machine, conveyor, line shafting, etc.; also 12 H. P. engine and 20 H. P. boiler; all in good condition; used less than one year. Good reason for selling.
I. L. FAUCETT, No. 5 Main St., Chattanooga, Tenn.

LIME AND STONE WORKS FOR SALE

Plant located in Georgia. Has been in continuous operation over forty years. An inexhaustible mountain of finest Dolomite limestone. Capacity, 450 barrels lime daily. Rock crushing plant, modern and new. Capacity, eight cars daily. Address
W. M. HARDY, Rome, Ga.

LIME PLANT FOR SALE.

Located in Georgia. In operation over forty years. Capacity, 450 barrels lime daily. Modern and new.
Address BOX 709, care ROCK PRODUCTS.

FOR SALE.

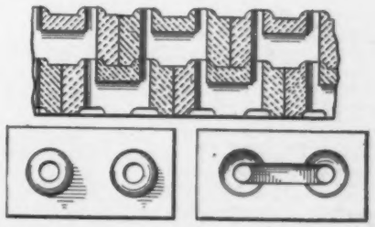
A complete concrete plant, with 100-ton press, mixing machine, shafting line, conveyor, etc. A fine bargain; have good reason for selling same.
Address BOX 711, care ROCK PRODUCTS.

FOR SALE.

Modern lime plant for sale; moderate competition, free waterpower, clean rock, work year round. Cash or terms. Address
BOX 712, care ROCK PRODUCTS.

FOR SALE

The Ideal Interlocking Building Block.



Patent No. 916,687. Patented March 30, 1909. Will sell U. S. Rights or State Rights. Address the Inventors, Ashcroft & Everett, Dresden, Ohio.

The Buckeye Fire Clay Co.
Manufacturers of
Sewer Pipe, Flue Linings, Chimney Tops, Fire Brick, Grate Tile, Ground Fire Clay, Wall Coping, Etc.
UHRICHSVILLE, .. OHIO

HIGH GRADE
FIRE BRICK
For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description. :: :: :: :
Louisville Fire Brick Works, K. B. GRAHN, Prop., Highland Park, Ky., P. O.

Deep Blast Hole Drilling
Is accomplished more economically than by any other method with the
"American" Drilling Machines

There is 40 years' experience behind these drills—they are standard.
Where electric power is available, equipped with motor they form the most portable and economical drill for quarry use.
Equipped with any power they are backed by the experience and reputation of the world's oldest and largest builders of this kind of drilling machines.
Tell us your blast hole requirements. We have 59 regular styles and sizes of machines for your selection, made in types to meet every possible condition of work.
Write for our new catalog No. 105, the most complete "Drill-Hole" catalog ever issued.

THE AMERICAN WELL WORKS
General Office and Works: AURORA, ILL., U. S. A. Chicago Office: First National Bank Building

CLASSIFIED BUSINESS DIRECTORY

BAGS.
Urschel Bates Valve Bag Co.
West Jersey Bag Co., The.

BAG PATCHER—CEMENT.
Little Co., C. H.

BALL MILLS.
Alsing, J. R., Eng. Co.
Power & Mining Mchy. Co.

BELTING.
Chicago Belting Co.
Gandy Belting Co.
Main Belting Co.

BRICK.
Harbison-Walker Refractories Co.

BUCKETS, DUMPING AND GRAB.
Atlas Car & Mfg. Co.

BURR STONES.
Charles, J. M.

CEMENT BRICK MCHY.
Bartlett, C. O., & Snow Co.
Martin-Henry Brick Machine Mfg. Co.
Peerless Brick Machine Co.

CEMENT HYDRAULIC.
Carolina Portland Cement Co.
Fowler & Pay.
Utica Hydraulic Cement Co.

CEMENT MCHY.
Alsing, J. R., Eng. Co.
Cummer, F. D., & Son Co.
Kent Mill Co.
Power & Mining Machy. Co.
Ruggles-Coles Eng. Co.

CEMENT, PORTLAND.
American Cement Co.
Alma Portland Cement Co.
Alpha Portland Cement Co.
Atlas Portland Cement Co.
Bartlett Co., The.
Carolina Portland Cement Co.
Castalia Portland Cement Co.
Chicago Portland Cement Co.
De Smet, Geo. W.
Dexter Portland Cement Co.
Dixie Portland Cement Co.
Edison Portland Cement Co.
French, Samuel H., & Co.
Goetz, Charles W., Lime & Cement Co.
Hartranft, Wm. G., Cement Co.
Ironton Portland Cement Co.
Kosmos Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Meacham & Wright Co.
Maryland Portland Cement Co.
Northwestern States Portland Cement Co.
Oklahoma Port. Cement Co.
Omega Portland Cement Co.
Phoenix Cement Co.
Penn Allen Portland Cement Co.
Pennsylvania Cement Co.
Peninsular Portland Cement Co.
Sandusky Portland Cement Co.
Superior Portland Cement Co.
Universal Portland Cement Co.
United Kansas Portland Cement Co.
Warner, Chas., Co.
Western Lime & Cement Co.
Wolverine Portland Cement Co.

CEMENT ROOFING MACHINERY.
American Cement Roofing Co.

CLAY PRODUCTS.
Buckeye Fire-Clay Co.
Western Lime & Cement Co.

CLAYWORKING MCHY.
American Clay Working Mchy. Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.

CONCRETE BLOCK MCHY.
Anchor Concrete Stone Co.
Century Cement Mchy Co.
Concrete Stone & Sand Co.
Perfection Block Mchy. Co.
Pettyjohn, The, Co.
Simpson Cement Mold Co.

CONCRETE MIXERS.
Cement Tile Mchy Co.
Kent Mach. Co.
Marsh Co., G. C.
Morehouse, N. J.
Svenson-Shuman Mach. Co.
Williams Contractors' Supply Co.

CONCRETE BEADS.
Carolina Portland Cement Co.

COLORINGS, BRICK AND MORTAR.
Chattanooga Paint Co.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Works.
Williams, C. K., & Co.

CONCRETE REINFORCEMENTS.
American Steel & Wire Co.

CONTRACTORS' EQUIPMENTS.
The Pierce-Walton Co.

CONVEYORS.
Austin Mfg. Co.
Bartlett, C. O., & Snow Co.
Caldwell, H. W., & Sons Co.
Ersham, J. B., & Sons Mfg. Co.
Power & Mining Machy. Co.

CORNER BEAD—STEEL.
Sharon Steel Hoop Co.

CRUSHERS.
Alsing, J. R., Eng. Co.
Austin Mfg. Co.
Bacon, Earl C.
Bartlett, C. O., & Snow Co.
Butterworth & Lowe.
Chrome Steel Wks.
Ersham, J. B., & Sons Mfg. Co.
Eureka Stone & Ore Crusher Co.
Kent Mill Co.
Marsh Co., G. C.
Martin, Henry.
McDonnell Boiler & Iron Works.
Power & Mining Machy. Co.
T. L. Smith & Co.
Sturtevant Mill Co.
Taylor Iron & Steel Co.
Williams Contractors Supply Co.
Williams Pat. Crusher & Pulverizer Co.

CUT GEARS.
Nuttall, R. D., Co.

DRAINAGE FITTINGS.
Wade Iron Sanitary Mfg. Co.

DRILLS.
American Well Works, The.
Keystone Traction Drill Co.
Howell Mining Drill Co.
Williams Contractors Supply Co.

DRYERS.
Alsing, J. R., Eng. Co.
American Process Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.
Ruggles-Coles Eng. Co.

DRYER CARS.
Ernst Wiener Co.
Power Mining & Mch. Co.

DUMP CARS.
Atlas Car & Mfg. Co.
Austin Mfg. Co.
Continental Car & Equip. Co.
Ernst Wiener Co.
Power & Mining Machy. Co.
Sackett Screen & Chute Co., H. B.

DYNAMITE AND POWDER.
Aetna Powder Co.
Burton Powder Co.
DuPont Powder Co.
Independent Powder Co.

ENGINEERS.
Bacon, Earl C.
J. C. Buckbee Co.
Fuller Eng. Co.
Schmatolla, Ernest.
Spackman, Henry, Eng. Co.

EXPANSION BOLTS.
Farrington, H.

FIBRE MCHY.
Ohio Fibre Mch. Co.
Shuart-Fuller Mfg. Co.

FIRE BRICK.
Ashland Fire Brick Co.
Buckeye Fire-Clay Co.
Carolina Portland Cement Co.
Harbison-Walker Refractories Co.
Louisville Fire Brick Co.
Union Mining Co.

GAS AND GASOLINE ENGINES.
Power & Mining Mch. Co.

GAS PRODUCERS.
Duffs Patents Co.
Power & Mining Mch. Co.

GYPSUM.
American Gypsum Co.
Carolina Portland Cement Co.
Empire Gypsum Co.
Iowa Hard Plaster Co.
King, J. B., & Co.
Plymouth Gypsum Co.
Niagara Gypsum Co.
U. S. Gypsum Co.

GYPSUM MCHY.
Butterworth & Lowe.
Cummer, F. D., & Son Co.
Ersham, J. B., & Sons Mfg. Co.
McDonnell Boiler & Iron Works.

HARDENING CYLINDERS.
Alsing, J. R., Eng Co.
American Clay Machinery Co.

HYDRATING CYLINDERS.
Alsing, J. R., Eng Co.
Clyde Iron Works.
Kritzer, The, Co.
National Mortar & Supply Co.

HYDRATING MCHY.
Clyde Iron Works.
Kritzer Co., The.

IRON COLUMNS.
Mostberger-Langner Iron Co.

LIME.
Carolina P. C. Co.
Farman Cheshire Lime Co.
Fowler & Pay.
Goetz, Charles W., Lime & Cement Co.
Ohio & Western Lime Co., The.
Kelly Island Lime & Trans. Co.
Marblehead Lime Co.
Mitchell Lime Co.
National Lime & Stone Co.
National Mortar & Supply Co.
New Jersey Lime Co.
Pierce City Lime Co.
The Scioto Lime & Stone Co.
Western Lime & Cement Co.

LIME, HYDRATED.
Ohio & Western Lime Co., The.
Marblehead Lime Co.
National Lime and Stone Co.
National Mortar & Supply Co.
The Scioto Lime & Stone Co.
Warner, Chas., Company.

LOCOMOTIVES.
Davenport Locomotive Wks.
Ernst Wiener Co.

LUBRICATING DEVICES.
Van Doren Co., The C. J.

METAL LATH.
Carolina Portland Cement Co.

PNEUMATIC TOOLS.
Howell Mining Drill Co.

PLASTER MCHY.
Butterworth & Lowe.
Cummer, F. D., & Son Co.
Dunning, W. D.
Ersham, J. B., & Sons Mfg. Co.
Williams Pat. Crusher & Pulverizer Co.

PLASTER.
American Gypsum Co.
Carolina Portland Cement Co.
Empire Gypsum Co.
Iowa Hard Plaster Co.
King, J. B., & Co.
National Mortar & Supply Co.
Plymouth Gypsum Co., The.
Rader, Gustave, Co.
Sackett Plaster Board Co.
U. S. Gypsum Co.

PULVERIZERS.
Ernst Wiener Co.
Alsing, J. R., Eng. Co.
Kent Mill Co.
Lehigh Car, Wheel & Axle Wks.
Raymond Bros. Co., The.
Sturtevant Mill Co.
Williams Pat. Pulverizer Co.

RAILROADS.
Illinois Central R. R.
Monon Route.

RAILROAD MATERIAL.
Atlas Car & Mfg. Co.
Ernst Wiener Co.

ROOFING MATERIAL.
Barrett Manufacturing Company.
Carolina Portland Cement Co.

SAND.
Bartlett Co., The.
Ottawa Silica Sand Co.
United States Silica Co.

SAND-LIME BRICK MCHY.
American Clay Wking. Mchy. Co.
American Sand Stone Brick Co.
International Sand-Lime Brick & Mach. Co.

SCALES.
Richardson Scale Co.

SCREENS.
Butterworth & Lowe.
Ersham, J. B., & Sons Mfg. Co.
Johnson & Chapman Co.
Power & Mining Mchy. Co.
Sackett Screen & Chute Co., H. B.

SEWER PIPES.
Buckeye Fire Clay Co.

SOAP STONE FINISH.
American Soap Stone Finish Co.

STEAM SHOVELS.
The Bucyrus Co.
The Vulcan Steam Shovel Co.

STUCCO RETARDER.
Chemical Stucco Retarder Co.
Ohio & Binns Retarder Co.

TUBE MILLS.
Alsing, J. R., Eng. Co.
Power & Mining Machy. Co.

WATER PROOFING.
Anhydrous Pressed Stone Co.
Aquabar Co., The.
Barrett Manufacturing Co.
Carolina Portland Cement Co.
De Smet, Geo. W.
Marblehead Lime Co.
Maumee Chemical Co.
Sanitary Construction & Mfg. Co.
Wadsworth, Howland & Co., Inc.

Red, Brown, Buff and Black

CHATTANOOGA PAINT CO. MORTAR ECLIPSE COLORS CHATTANOOGA, TENN.

MORTAR COLORS

The Strongest and Most Economical in the Market.

CHATTANOOGA PAINT CO. STANDARD LOWES PAINT CHATTANOOGA, TENN.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO.

Chattanooga, Tennessee

TWENTY LONG YEARS

of time and weather tried out Ricketso famous "Red Brick" Brand.

They Never Fade

COLOR

for Mortar, Brick, Cement, Stone, etc., and proved it to be absolutely permanent. Red, Brown, Buff, Purple and Black.

Ricketson Mineral Paint Works

MILWAUKEE, WISCONSIN

Fast Trains Day and Night on the MONON ROUTE

EXCELLENT SERVICE
BETWEEN
Chicago
La Fayette
Indianapolis
Cincinnati
Dayton
West Baden and
French Lick Springs
Louisville

Electric Lighted Standard Sleepers on Night Trains, Parlor and Dining Cars on Day Trains

Frank J. Reed, G.P.A. E. P. Cockrell, A.G.P.
CHICAGO

IMPORTANT
Advertisers—Take Notice

Changes of Copy

Must be in this office by the Twenty-eighth of the month, if proofs are desired; if no proofs are required the desired changes can be made if copy is received by noon of the Second.

New Advertisements

To insure proper classification, should be in this office by the Twenty-eighth of the month, but they can be inserted in the last form going to press if received by the Second. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

THE FRANCIS PUBLISHING COMPANY
355 Dearborn Street, Chicago, Ill.

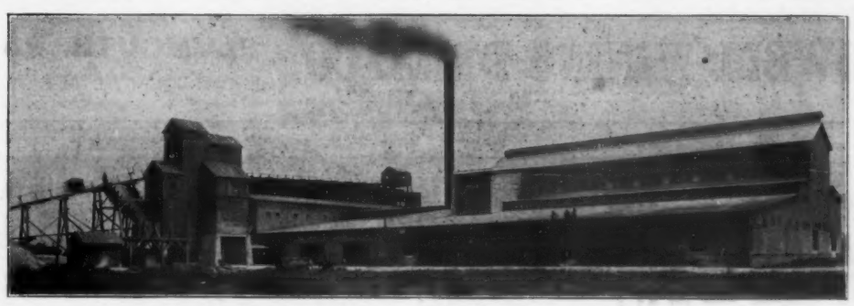
THE HENRY MARTIN BRICK MACHINE MFG. CO.
LANCASTER, PENNA.

ROCK CRUSHING MACHINERY
BRICK-MAKING MACHINERY
CLAY WORKING APPLIANCES
CEMENT BRICK MACHINERY
SAND GRINDING MACHINERY
SAND DRYERS, BRICK DRYERS, ETC.

SEND FOR PLANS AND ILLUSTRATED CATALOGUE

WE HAVE FOR SALE
"Plastering—Plain and Decorative"
By MILLAR
Acknowledged THE BEST BOOK on the art of plastering
Price $7.50 Address—ROCK PRODUCTS

Ernest Schmatolla
Consulting Chemical Engineer
Specialist in the designing, construction and operation of PRODUCER GAS FIRED KILNS, FOR LIME AND OTHER ROCK PRODUCTS.
150 Nassau Street, NEW YORK CITY



WORKS AT GIBSONBURG, O., Largest Lime Manufacturing Plant in the World.

Banner Hydrate Lime

Best on the Market
and Works Perfectly Under the Tools.

SOLD TO DEALERS ONLY.

For Prices and Information Write

National Mortar & Supply Co.,
209 Ninth Street, PITTSBURG, PA.

Index to Advertisements

Aetna Powder Co. 15
Alma Cement Co. 1
Alpha Portland Cement Co. 2
Alsing, J. B., Eng. Co. 53
American Cement Co. 68
American Cement Roofing Co. 16
American Clay Working Machinery Co. 67
American Gypsum Co. 59
American Process Co. 18
American Sandstone Brick Machine Co. 66
American Soap Stone Finish Co. 14
American Steel and Wire Co. 10
American Well Works, The 45
Anchor Concrete Stone Co. 64
Anhydrous Pressed Stone Co. 9
Aquabar Co., The 9
Ashland Fire Brick Co. 18
Atlas Car & Mfg. Co. 68
Atlas Portland Cement Co. 68
Austin Mfg. Co. 49

Bacon, Earle C. 48
Barrett Mfg. Co. 12
Bartlett, C. O., & Snow Co., The 48
Bartlett Co., The 8
Books for the Trade 55
Buckbee, J. C., Co. 2
Buckeye Fire Clay Co. 45
Bucyrus Co., The 53
Burton Powder Co. 14
Butterworth & Lowe 56

Caldwell, H. W., & Sons Co. 17
Carolina Portland Cement Co. 1
Castalia Portland Cement Co. 7
Cement Tile Mchy. Co. 63
Century Cement Mach. Co. 63
Charles, J. M. 9
Chattanooga Paint Co. 46
Chemical Stucco Retarder Co. 57
Chicago Belting Co. 1
Chicago Portland Cement Co. 2
Chrome Steel Works 48
Clinton Metallic Paint Co. 55
Clyde Iron Works 6
Concrete Stone & S. Co. 65
Continental Car & Equip. Co. 13
Cummer & Son Co., F. D. 18-57

Davenport Loco. Works 17
De Smet, Geo. 8
Dexter Portland Cement 1
Dixie Portland Cement Co. 7
Duff Patents Co. 16
Dunning, W. D. 67
Du Pont Powder Co. 15

Edison Portland Cement Co. 2
Empire Gypsum Co. 62
Ehrsam, J. B., & Sons Mfg. Co. 58
Eureka Stone & Ore Crusher Co. 49

Farnham Cheshire Lime Co. 12
Farrington, H. 18
Fowler & Pay 13
French, Samuel H., & Co. 1
Fuller Eng. Co. 17

Gandy Belting Co., The 66
Goetz, C. W., Lime & Cement Co. 13
Griscom-Spencer Co. 54

Harbison-Walker Refractories Co. 1
Howell Mining Drill Co. 48

Illinois Cent. Ry. 17
Independent Powder Co. 15
International Sand-Lime Brick & Mach. Co. 66
Iowa Hard Plaster Co. 57
Ironton Portland Cement Co. 45

Johnston & Chapman Co. 11

Kelley Island Lime & Trans. Co. 13
Kent Machine Co. 52
Kent Mill Co. 52
Keystone Traction Drill Co. 51
King, J. B., & Co. 55
Kosmos Portland Cement Co. 34
Kritzer Company, The 5

Lehigh Car Wheel & Axle Works 51
Lehigh Portland Cement Co. 2
Little, C. H., Co. 36
Louisville Fire Brick Works 45

McDonnell Boiler & Iron Wks. 56
Maiff Belting Co. 48
Marsh, G. C. 50
Marblehead Lime Co. 13
Marquette Cement Mfg. Co. 1
Martin, Henry, Brick Mach. Mfg. Co. 47
Maryland P. C. Co. 33
Maumee Chemical Co. 36
Meacham & Wright 35
Miller's Plastering 47
Mitchell Lime Co. 12
Monon Route 47

Morehouse, N. J. 50
Mostberger-Langner Iron Co. 66

National Lime & Stone Co. 14
National Mortar & Supply Co. 47
New Jersey Lime Co. 14
Niagara Gypsum Co. 62
Northwestern States P. C. Co. 35
Nuttall, R. D., Co. 17

Ohio-Binns Retarder Co. 59
Ohio Fibre Machy. Co., The 55
Ohio & Western Lime Co. 13
Oklahoma Port. Cement Co. 33
Omega Portland Cement Co. 35
Ottawa Silica Sand Co. 1-35

Peerless Brick Mach. Co. 63
Pierce City Lime Co. 9
Penn Allen Port. Cem. Co. 35
Pennsylvania Cement Co. 7
Peninsular Port. Cement Co. 2
Perfection Block Mach. Co. 66
Pettyjohn Co., The 36
Phoenix Cement Co. 1
Plymouth Gypsum Co., The 55
Power & Mining Mchy. Co. 4

Rader-Gustave Co. 56
Raymond Bros. Co., The 54
Richardson Scale Co. 36
Ricketson Mineral Paint Wks. 46
Ruggles-Coles Eng. Co., N. Y. 18

Sackett Plaster Board Co. 61
Sackett Screen & Chute Co., H. B. 11
Sandusky P. C. Co. 8
Sanitary Construction Mfg. Co. 64
Schmatolla-Ernest 47
Scioto Lime & Stone Co. 14
Sharon Steel Hoop Co. 57
Shuart-Fuller Mfg. Co. 55
Smith, T. L., Co. 49
Spackman, Henry, Mfg. Co. 18
St. Louis Portland Cement Co. 2
Sturtevant Mill Co. 11
Superior Portland Cement Co. 35
Svenson-Shuman Machine Co. 52

Taylor Iron & Steel Co. 51

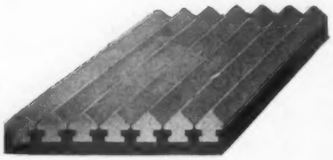
Union Mining Co. 1
United Kansas Port. C. Co. 7
United States Gypsum Co. 60
United States Silica Co. 33
Universal Portland Cement Co. 33
Utica Hydraulic Cement Co. 34

Van Doren, C. J. 51

Vulcan Steam Shovel Co. 53
Wade Iron Sanitary Mfg. Co. 55
Wadsworth, Howland Co. 9
Warner, Charles, Co. 8
Wiener Co., Ernst 67
Western Lime & Cement Co. 12
West Jersey Bag Co. 33
Williams, C. K., & Co. 18
Williams Contractors' Supply Co. 18
Williams Patent Crusher & Pulverizer Co. 50
Winant Cooperage Co. 18
Wolverine Portland Cement Co. 2

A Tempered Steel Jaw Plate for Blake Type Crushers

CHROME STEEL WORKS
CHROME, N.J., U.S.A.
FORMERLY OF BROOKLYN, N.Y.



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

¶ The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

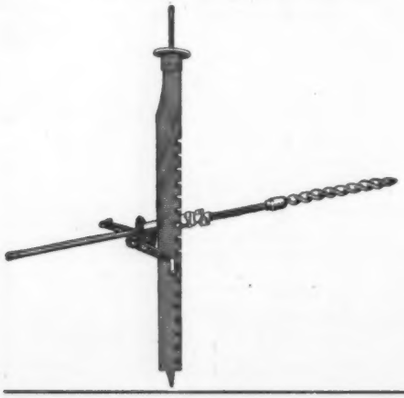
¶ The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc.

¶ Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

— Send for Descriptive Pamphlet —

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo. George T. Bond, Easton, Pa. George W. Myers, San Francisco, Cal.



HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that an Auger will penetrate.

Awarded Gold Medal, St. Louis.

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

HOWELL MINING DRILL CO., PLYMOUTH, PA., U. S. A.
(ESTABLISHED 1878.)

FARREL ORE AND ROCK CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE RECEIVING CAPACITY—SPECIALLY DESIGNED AND CONSTRUCTED FOR HARDEST KIND OF WORK

COMPLETE CRUSHING PLANTS OUR SPECIALTY

• SEND FOR CATALOGUE •

EARLE C. BACON, ENGINEER.

FARREL FOUNDRY & MACHINE Co. HAVEMEYER BUILDING, NEW YORK

THE C. O. BARTLETT & SNOW CO. CLEVELAND, OHIO, U.S.A.
MANUFACTURERS OF

Crushers, Graders, Elevators
Drop Forge Steel Chain
Malleable and Steel Buckets

DRYERS—the largest assortment in the world.

GYPSUM MACHINERY, PLASTER MACHINERY, SELF-DUMPING CAR HAULS, SAND AND BRICK DRYERS AND CONVEYORS.

Our motto is

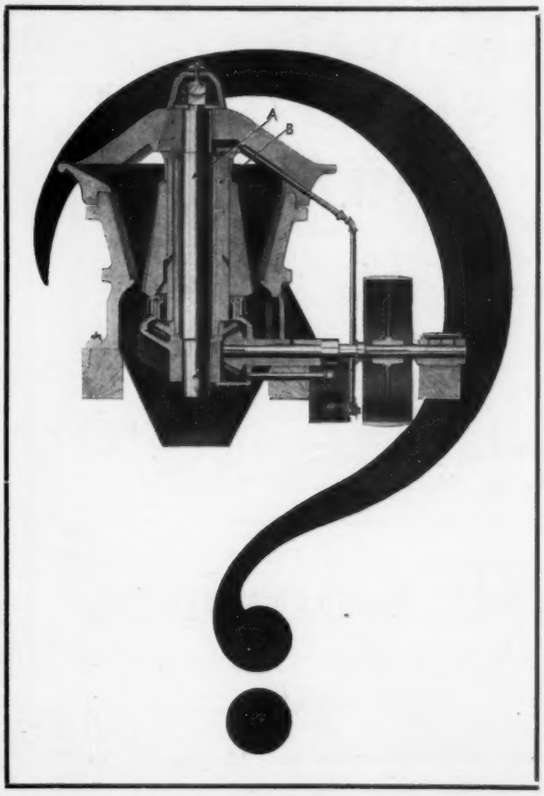
"The Best and Always the Best."

Leviathan Belting

LEVIATHAN ELEVATING TRANSMITTING CONVEYING BELTING

MAIN BELTING COMPANY, Market and Randolph Sts. CHICAGO, ILLINOIS

Philadelphia New York Boston Buffalo Pittsburg



Why don't you investigate the merits of the Symons Crusher

The SYMONS is making a remarkable record on Montello granite. The hardest stone in the U. S.

Write for Catalogue No. 166.

THE T. L. SMITH CO.
301 OLD COLONY BLDG
CHICAGO, ILL.
MAJESTIC BLDG
MILWAUKEE, WIS.
170 BROADWAY
NEW YORK CITY

Style No. 1, 7x8 Jaw Opening, 4 Horse-power.

Our Crushers Are Startling the World

This illustration shows the exact product, numbered from 1 to 8, that our CRUSHERS produce. Would you not be interested in a crusher if we guarantee to produce from 10 to 20 tons in ten hours with this little No. 1 machine, from 3 to 4-inch material at one operation? We have sold over 200 of these machines in the past year, and they are doing just this very kind of work. We manufacture twenty different-sized crushers.

Eureka Stone & Ore Crusher Company
(Successors to the Universal Stone Crusher Company)
Box 591, Cedar Rapids, Iowa

AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

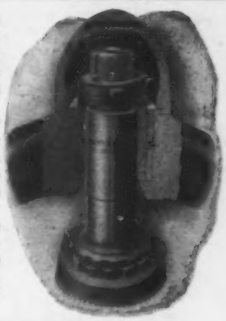
Plans and specifications furnished for any sized plant.

Send for Catalogue No. 17.

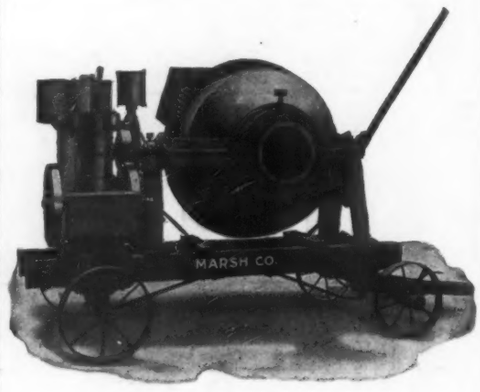
All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.



Austin Manufacturing Co., Chicago,
New York City Office
1682 FULTON BUILDING
Hudson Terminal



Furnished with any combination of power and mounting, chain or gear connection at option.

Marsh-Dexter Mixer

We claim a lot for this machine.

If our claims are true you want to know it.

If you will write us we will tell you how to find out.

Marsh Company

903 Old Colony Building
CHICAGO

RAW MATERIAL GRINDERS

New Williams Universal

FOR TUBE MILL FEED

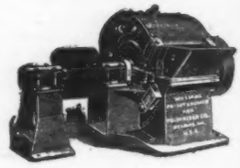
800 BARRELS 22 HOURS
95 PER CENT THROUGH 20 MESH
HORSE POWER 40 TO 50

WE ALSO GRIND
GYPSUM, LIME, COAL AND SHALE

Vulcanite Grinder

FOR ROLLER MILL FEED
TAKES MATERIAL FROM
GYRATORY, DIRECT

CAPACITY 20 TONS HOUR
FINENESS ¼ IN., ½ IN. AND ¾ IN.
HORSE POWER 40 TO 45
1,300 MILLS NOW IN USE



WRITE FOR BULLETIN NO. 12

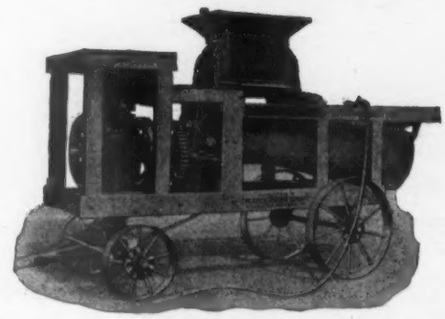
WORKS:
ST. LOUIS, MO.

SALES OFFICE:
OLD COLONY BLDG.
CHICAGO

The Williams Pat. Crusher & Pulverizer Co.

San Francisco Offices: 428 Monadnock Building

Coltrin Concrete Mixers



CHICAGO GREAT WESTERN RAILWAY
OFFICE OF DIVISION ENGINEER
206 E. Harrison St.

G. H. HERROLD,
Division Engineer.

The Knickerbocker Co., Jackson, Mich.

Gentleman:—During the season of 1908 I used one of your Coltrin Concrete Mixers on bridge work. I constructed several double and triple 10 by 7 reinforced concrete culverts. I had two crews at work, one using your mixer and the other mixing by hand. I find in comparing costs that the labor cost on the culverts where we used your mixer was about 28% less than on those jobs where we mixed by hand.

Your machine is a good one, does not get out of order and turns out a uniform mixture.

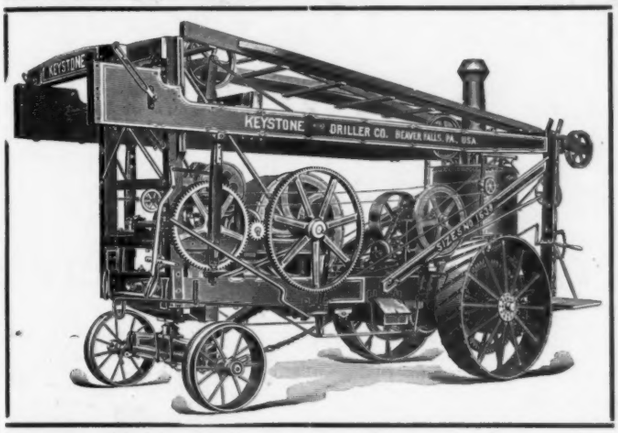
Yours truly,
G. H. HERROLD

P. B. MILES' LATEST BLOCK MACHINE
and a full line of concrete machinery shipped on approval

N. J. MOREHOUSE

Wenatchee, Washington

KEYSTONE CHURN DRILLS FOR HEAVY BLAST HOLES

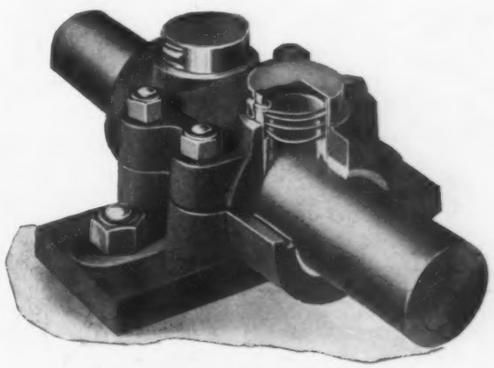


IN CEMENT and STONE QUARRIES, where large and deep blast holes can be used to advantage, these machines form the cheapest and quickest means of sinking 6 inch holes.

Penetrate any formations, any depth, 30 or 300 feet. Self-moving or portable, if desired.

Ask for Catalog No. 4.

KEYSTONE TRACTION DRILL CO.
Monadnock Bldg., CHICAGO. BEAVER FALLS, PA., 170 Broadway, NEW YORK. CARTHAGE, MISSOURI.



YOUR COAL BILL

Is something you constantly watch. If you could find an engineer who would save 10 per cent, you would pay him a large salary. Did it ever occur to you to look beyond your engineer?

Did you ever stop to think that a reduction of friction throughout your plant, would reduce the amount of power necessary, hence a reduction in coal consumption?

You will of course admit that perfect lubrication would greatly reduce friction.

The new *Van Doren Lubricating Device* is designed to give *perfect lubrication*, and it *does what it is designed to do.*

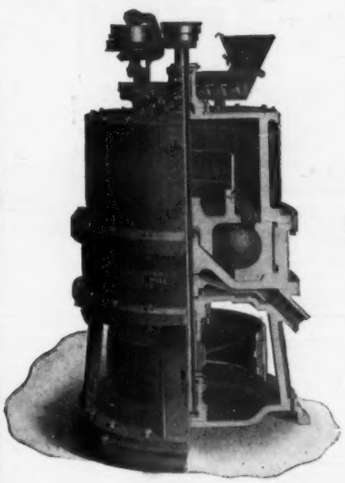
Your saving on oil, will in less than a year pay the cost of installation.

Your COAL SAVING is YOURS from the start.

Write for complete information.

C. J. Van Doren Co., 5 West Madison Street, CHICAGO

The Fuller-Lehigh Pulverizer Mill



Cement Companies equipped with Fuller Mills advertise the fact that the consumer gets 38 pounds more of the IMPALPABLE POWDER or REAL CEMENT in every barrel of cement produced by The Fuller Mill than by any other

Produces Commercially

Cement having a higher percentage of Impalpable Powder than can be obtained by any other mill. Tests show that the tensile strength of a one-fourth mortar made with cement pulverized by the Fuller Mill is higher than the tensile strength of a one-third mortar made with cement pulverized to the fineness required by the Standard Specifications.

Lehigh Car, Wheel & Axle Works
Main Office: CATASAUQUA, PA.

New York, N. Y. Kansas City, Mo.
Hamburg, Germany, Alsterdamm 7.

ROCK CRUSHERS

¶ The problem has always been to get jaws, concaves, heads, toggles, check plates that would wear!

¶ **Tisco Manganese Steel** has solved the difficulty and made rock crushing easy.

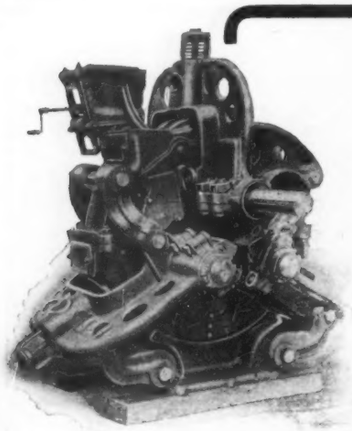
¶ Why stop so often for repairs when you can get **Tisco** parts that last many times longer than chilled iron parts.

¶ **Tisco Manganese Steel** will increase your output, reduce your repair account and increase the efficiency of your plant.

¶ Can you overlook these truths?

Catalog?

Taylor Iron & Steel Co.
HIGH BRIDGE, NEW JERSEY



MAXECON

MEANS

MAXimum of ECONomy

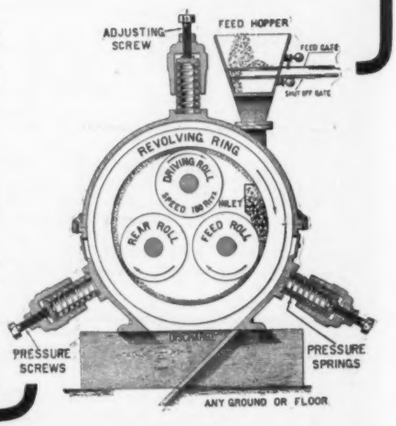
Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.) Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., W. H. Harding, Prest., Coplay P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

THE RING WOBBLES

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.
Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.



KENT MILL CO.

170 BROADWAY, NEW YORK CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 40, BERLIN

"The Svenson is Easily the Simplest and Fastest Mixer Ever Built"

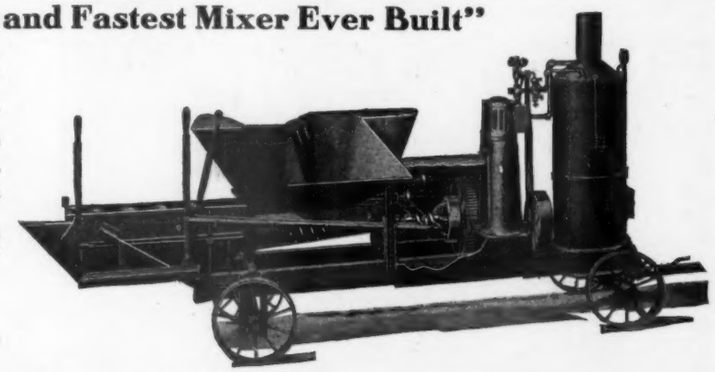
Quit wasting money and making bad concrete with that "batch" machine. Don't fuss and lose time with complicated mixers. Let us tell you about this simple, strong machine.

The Svenson Concrete Mixer

Has only five moving parts, all on one shaft. It keeps going and it keeps the men going.

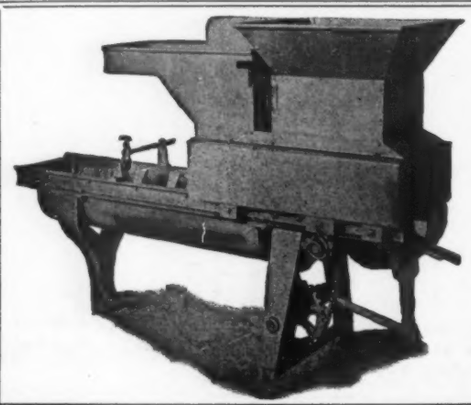
We want to tell you our ideas on proper mixing, for the "Svenson" mixes dry, then wet—the only scientific way. And it proportions the mix positively, just the way you set it.

Send for Catalogue.



Svenson-Shuman Machine Co.,

602 Bessemer Bldg., PITTSBURGH, PA.



"KENT" CONTINUOUS MIXER

"The Mixer that measures and Mixes"

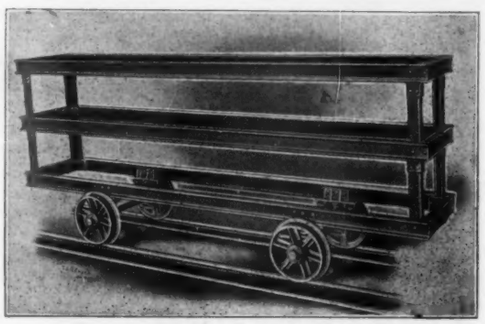
"You fill the Hopper, the Mixer does the rest"

Simple, reliable, economical, durable and moderate in price

Write for Catalogue and Prices to

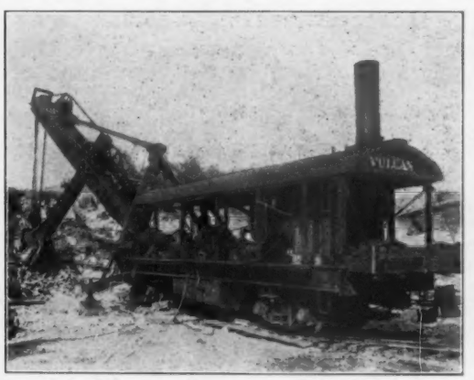
The Kent Machine Co.

306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

"Little Giant" loading blasted rock, Sibley Quarry Co., Sibley, Mich.



"Giant," Class A, digging cement rock without blasting, Burt Portland Cement Co., Bellevue, Mich.

All GEARS on

Vulcan Steam Shovels

are made of **Cast Steel,** with **Cut Teeth.** All castings under heavy strain are of **Basic, Open-hearth Steel.** All iron castings are of the very best quality **Gray Iron.** These are only a few of the many features that characterize Vulcan Steam and Electric Shovels. Everypart is manufactured from material that has been proven by many years of actual work to be the best for the purpose. The design of every part, and of the shovel complete, is what 30 years' experience in high class steam shovel building has taught us to be correct. We have so perfected our shovels that we are willing to put one in your quarry and cover it with an iron-clad guarantee to give you complete satisfaction. Can you ask for a better proposition than this?

GIANT BOOM SHOVELS
6 sizes, 1½ to 5 cubic yard dippers.

LITTLE GIANT SHOVELS
2 sizes, 1¼ cubic yard dippers.

REVOLVING SHOVELS
3 sizes, ½ to 1½ cubic yard dippers.

Every shovel fully **improved** and **guaranteed. Traction wheels** or **trucks. Steam** or **electric** power.

Full information, prices, etc., on request. Write today.

THE VULCAN STEAM SHOVEL COMPANY

129 Vulcan Place, TOLEDO, OHIO.

1869 1909

Our Fortieth Anniversary

Which means that we are offering with our machines, Gratis to the Trade, the experience gathered in these FORTY YEARS

A machine handled without experience
Is like an animal without a guide.

J. R. ALSING ENGINEERING CO.

R. F. Abbe, Pres't.

136 LIBERTY STREET :: NEW YORK

95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY.

Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.

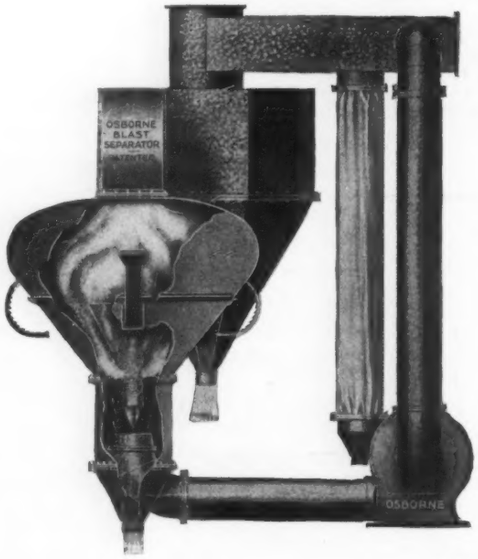
THE BUCYRUS CO.

Branch Offices:
NEW YORK
SAN FRANCISCO

Main Office & Works:
South Milwaukee, Wis.

STOP LOSING MONEY

In Your Grinding Room



You know it costs money to separate your material after it is ground, so why not use the best means of separation?
We can prove that the

Osborne Pneumatic Blast Separator

IS THE BEST AND CHEAPEST MACHINE FOR YOU TO USE.

It will give you larger capacities for less horse power than any other machine on the market. Will separate your material to 200 mesh fine.

Capacities, from 3½ to 10 tons per hour of finished product 95% 100 mesh fine.

STOPS ALL FLOATING DUST IN YOUR GRINDING ROOM.

Circular "A" Tells You More About It.

Manufactured by

THE GRISCOM-SPENCER CO. 90 West Street, New York City

65%

SAVING

IN COST OF

GRINDING COAL

AT A

CEMENT PLANT

A Cement Manufacturer ground in 1907—Thirteen Thousand Tons Coal

Using the Raymond Roller Mill with Air Separation

The cost to him for grinding was per ton—Twelve and One Half Cents.

In 1906—The same manufacturer ground his coal in a Ball and Hammer Mill, with the necessary auxiliary machinery instead of Air Separation.
The cost to him for grinding was per ton—Thirty Three and Six-tenths Cents.

We cite these figures as simply typical of the extremely satisfactory results secured by our customers with the Raymond System, in grinding and handling all kinds of materials, from coal to dry paint colors, from limestone to alfalfa.

To the manufacturer who **grinds any material whatsoever**, we say—"You are **probably losing profits** if you are not **using the Raymond System of Grinding and Separating.**" We are always ready to "show you."

Raymond Brothers Impact Pulverizer Co. 141 Laflin St., CHICAGO

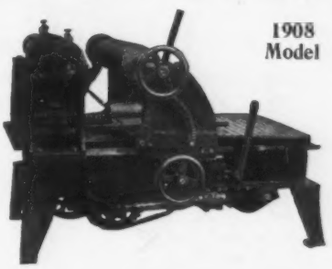
PLYMOUTH CEMENT
AND
WOOD FIBER PLASTER

The Brand that's Made from Pure Gypsum Rock.

WRITE US FOR PRICES AND ADVERTISING MATTER.

Plymouth Gypsum Co.
Fort Dodge, Iowa

The Shuart-Fuller Improved Fiber Machine



1908 Model

Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.
ELYRIA, OHIO

THE SHUART-FULLER CO., Elyria, Ohio. St. Louis, June 17, 1907.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine

ACME CEMENT PLASTER CO
By Jas. R. Dougan, Sec.

SPECIAL MACHINERY AND FORMULAS
FOR THE MANUFACTURE OF
WOOD FIBRE PLASTER, FIRE PROOFING AND KINDRED PRODUCTS

We furnish the latest improved FIBRE MACHINE, (fully patented) also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.
WRITE FOR TERRITORY

The Ohio Fibre Machinery Co.
J. W. VOGLESONG, GENERAL MANAGER
Elyria, Ohio

KING'S WINDSOR CEMENT
FOR PLASTERING WALLS AND CEILINGS

Elastic in its nature, can be applied with 25 per cent less labor and has 12½ per cent more covering capacity than any other similar material

Buffalo Branch, CHAS. C. CALKINS, Manager
322 W. Genessee Street

J. B. KING & CO., No. 1 Broadway, New York

CLINTON METALLIC PAINT CO.
CLINTON, N. Y.
LARGEST AND OLDEST MANUFACTURERS OF
BRICK AND MORTAR COLORING
Be sure you get the genuine with the "Little Yellow Side-Label" on each package.
Let us tell you about Side-Walk Black.

Wade Iron Sanitary Mfg. Co.
MANUFACTURER OF
Wade Back Water Gate Valves, Clean-Out House Drainage Fittings, Iron Catch Basins and Cast Iron Covers, Etc.
Send for Catalogue.
Long Distance Phone, Harrison 6713.
43 E. Harrison Street, CHICAGO, ILLS.

BOOKS FOR THE TRADE

Architects and Engineers

Practical Reinforced Concrete
H. B. Andrews. Price $2.00.

Analysis of Elastic Arches of Steel, Masonry and Reinforced Concrete
Joseph W. Balet. Price $3.00.

Theory of Steel-Concrete Arches and Vaulted Structures
Wm. Cain. Price $0.50.

Concrete Country Residences
Price $1.00.

Graphical Handbook for Reinforced Concrete Design
John Hawkesworth, C. E. Price $2.50.

Architects' and Engineers' Handbook of Reinforced Concrete Construction
L. J. Mensch. Price $2.00.

Concrete and Reinforced Concrete Construction
Homer A. Reid. Price $5.00.

Theory and Design of Reinforced Concrete Arches
Arvid Reuterdahl. Price $2.00.

Treatise on Concrete, Plain and Reinforced.
F. W. Taylor and S. E. Thompson. Price $5.00.

Concrete Engineers' and Contractors' Pocketbook
Wm. F. Tubesing. Price $1.00.

Principles of Reinforced Concrete Construction
F. E. Turneaure and E. R. Maurer. Price $3.00.

Concrete Steel
W. N. Twelvetrees. Price $1.90.

Handbook on Reinforced Concrete
F. D. Warren. Price $2.50.

General Specifications for Concrete Work as Applied to Building Construction
Wilbur J. Watson. Price $0.50.

American Engineering Practice in the Construction of Rotary Portland Cement Plants
B. B. Lathbury and C. Spackman. Price $2.00.

Cement and Lime Manufacturers

Manufacturer of Hydraulic Cement
A. V. Bleininger. Price $1.25.

Limes Cements and Mortars, Concretes, Mastics, etc.
G. R. Burnell. Price $0.60.

Portland Cement; its manufacture, testing and use
David B. Butler. Price $5.00

Instructions to Inspectors on Reinforced Concrete Construction
Geo P. Carver. Price $0.50.

Lime, Mortar and Cement
A. I. Dibbin. Price $2.00.

Cements, Limes and Plasters
Edwin C. Eckel. Price $6.00.

Practical Treatise on Limes, Hydraulic Cements and Mortars
Gen. Q. A. Gillmore. Price $4.00.

Mortars, Plasters, Stuccos, Concretes, Portland Cements and Compositions
F. Hodgson. Price $1.50.

Experimental Researches upon the Constitution of Hydraulic Mortars.
H. LeChatelier. Price $2.00.

Concrete Factories
Robert W. Lesley. Price $1.00.

Portland Cement; Composition
Richard K. Meade. Price $3.50.

The Constitution of Hydraulic Cements
S. B. Newberry. Price $0.50.

Manufacture of Concrete Blocks
Wm. M. Torrance and others. Price $1.50.

Practical Cement Testing
W. Purves Taylor. Price $3.00.

Notes on the Testing and Use of Hydraulic Cement
Fred P. Sutcliffe. Price $1.00.

Calcareous Cements
G. R. Redgrave and Charles Speckman.

"Portland Cement from a Financial Standpoint"
By Edwin C. Eckel C. E. Price $2.00.

"Plastering—Plain and Decorative"
By Millar. Price $7.50.

Cement Users

Foundation and Concrete Works
E. Dobson. Price $0.60.

The Uses of Hydraulic Cement
Frank Harvey Eno. Price $1.00.

Portland Cement for Users
Henry Faija and D. B. Butler. Price $1.20.

Cements, Mortars and Concrete
Myron C. Falk. Price $2.50.

Reinforced Concrete
W. H. Gibson and W. L. Webb. Price $1.00.

Concrete System
F. B. Gilbreth. Price $5.00

Hand Book of Cost, Data
Halbert P. Gillette. Price $4.00.

Concrete Construction
H. P. Gillette and C. S. Hill. Price $5.00.

Cement Workers' and Plasterers' Ready Reference
H. G. Richey. Price $1.50.

Notes on Testing and Use of Hydraulic Cement
Fred P. Spalding. Price $2.00.

Reinforced Concrete
A. W. Buel and C. S. Hill. Price $5.00.

Concrete
Edward Godfrey. Price $2.50.

Reinforced Concrete
C. F. Marsh and Wm. Dunn. Price $7.00

Practical Treatise on Foundations
W. Patton. Price $5.00.

Concrete
Thomas Potter. Price $3.00.

Cement and Concrete
Louis C. Sabin. Price $5.00.

ROCK PRODUCTS, 355 Dearborn Street, CHICAGO

BUILDERS' SUPPLY DEALERS CAN MAKE TWO PROFITS!

Both Manufacture and Sell Rader Patented Plaster Board

If you are selling plaster boards you are making one profit. Why not manufacture them and make both manufacturers' and dealers' profits? With

RADER'S PATENTED MOULDING TABLES

you can manufacture the best plaster boards on the market and at less cost than the largest manufacturers, enabling you to compete with any brand, both in quality and price.

PLASTER BOARDS

are rapidly displacing all kinds of lath, being fire and vermin proof, lower in price, more rapid and economical in construction, stronger and more durable.

RADER'S PATENTED PLASTER BOARDS

made only with Rader's Patented Moulding Tables are the most satisfactory now on the market. Cannot be broken as can others, thereby eliminating all risk of loss by breakage in transportation or general rough handling. They have to be sawed in two. Each side of the board is adapted to different purposes thus having a double advantage over any other make. Three plants are now in operation to meet a growing demand.

A COMPLETE PLANT CAN BE INSTALLED AT A SMALL COST

as the Rader apparatus is licensed at a very low price and only a very small space is required for its operation. The device makes boards from ¼ to 1 inch in thickness.

TERRITORY AND RIGHTS CAN BE LICENSED

with the exception of the New England and Middle Atlantic states which have already been secured by one of the largest plaster manufacturing companies in the East.

Write us for Samples and Further Information.

GUSTAVE RADER CO. 1105 Metropolitan Ave. **BROOKLYN, N. Y.**

GET THE BEST

Finest Line of Gypsum Machinery

MADE

KETTLE CRUSHER NIPPERS

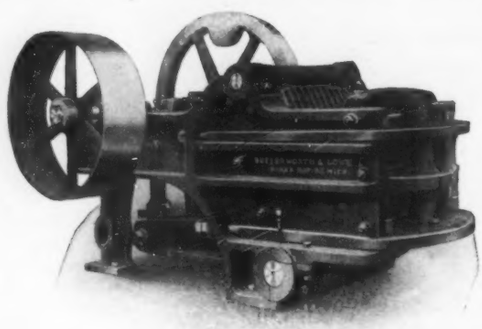
ASK FOR CATALOG OF

MOGUL NIPPERS. OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.

"Formerly Des Moines Mfg. & Supply Co."



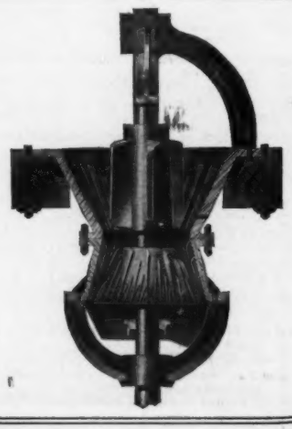
CRUSHERS

for soft rocks, burnt lime, etc.

GYPSUM MACHINERY

We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS



BUTTERWORTH & LOWE

17 Huron Street, GRAND RAPIDS, MICH.

Stucco Retarder

Strong
Uniform
Fine Ground
} RETARDER

We are the oldest Retarder firm in the United States, and above is our motto. New fire-proof plant and prompt service.

FREE SAMPLE ON REQUEST

Chemical Stucco Retarder Co.
WEBSTER CITY, IOWA.
INCORPORATED 1895

Plaster! Plaster!

Iowa Hard Plaster Co.

HARD BY NAME. HARD BY NATURE.
HARD TO BEAT. NOT HARD TO GET.

Iowa Hard Plaster Co. FT. DODGE IOWA....

CUMMER CONTINUOUS PROCESS
FOR
CALCINING GYPSUM
NO KETTLES USED — PLANTS IN OPERATION

Great Saving in Cost of Manufacture and Quality of Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

SLOTTED STEEL STUDDING
FOR FIREPROOF
PARTITIONS, SUSPENDED CEILINGS, FURRINGS.

Slotted Steel Studding

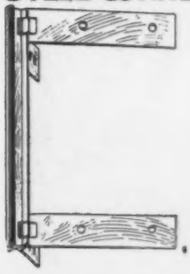
makes the easiest suspended ceiling to erect and the safest to plaster to. No carrying bars are required, attachment being made direct to ceiling hangers.

The lateral bracing of the studs automatically on 12 inch centers keeps the studs in perfect alignment and gives a rigid, unyielding surface for the plasterer to work on.

Write for special detail on

SLOTTED STEEL STUDDING
for use in Suspended Ceilings.

PARKER STEEL CORNER BEAD



The PARKER is the only bead that will hold plaster on its blade without punching.

The plaster is keyed with a grip that will withstand any heavy blow on the face of the bead.

The PARKER is Hot Galvanized and will not rust.

Stock lengths, 6, 7, 8, 9, 10 feet.

Get our prices if you want the best at low cost.

SHARON STEEL HOOP COMPANY,
COMMERCIAL NATIONAL BANK BUILDING,
CHICAGO

N.Y. REPRESENTATIVE: FULLER BROS. & COMPANY,
139 GREENWICH ST. NEW YORK.

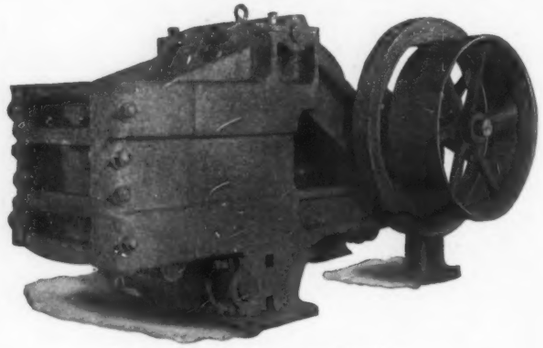
ENTERPRISE PLASTER MIXER

NOISELESS,
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and Retarder with Dry Plastering Materials.

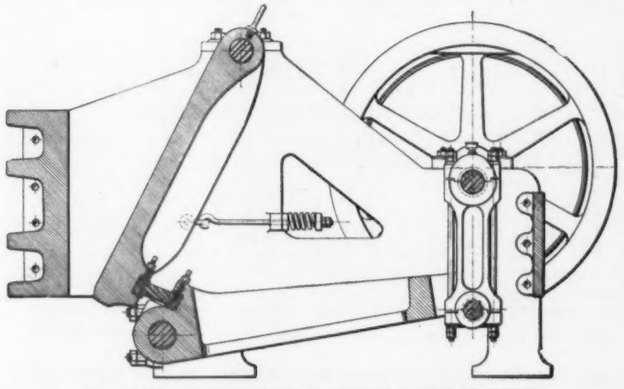
Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels, Vibratory Screens, Hair Pickers and Transmission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons of Gypsum per hour to 2½-inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER
The jaw opening at inlet is 18x28 inches.

The J. B. Ehrsam & Sons Mfg. Co.,

BUILDERS OF

COMPLETE EQUIPMENTS FOR PLASTER MILLS

Enterprise, Kansas

Does Quality Appeal to You?
Does Prompt Service Appeal to You?
Does Reliability Appeal to You?

Then Buy

Your Stucco and Wall Plasters of

The

AMERICAN GYPSUM CO.

PORT CLINTON, OHIO

Quality **Strength** **Reliability**

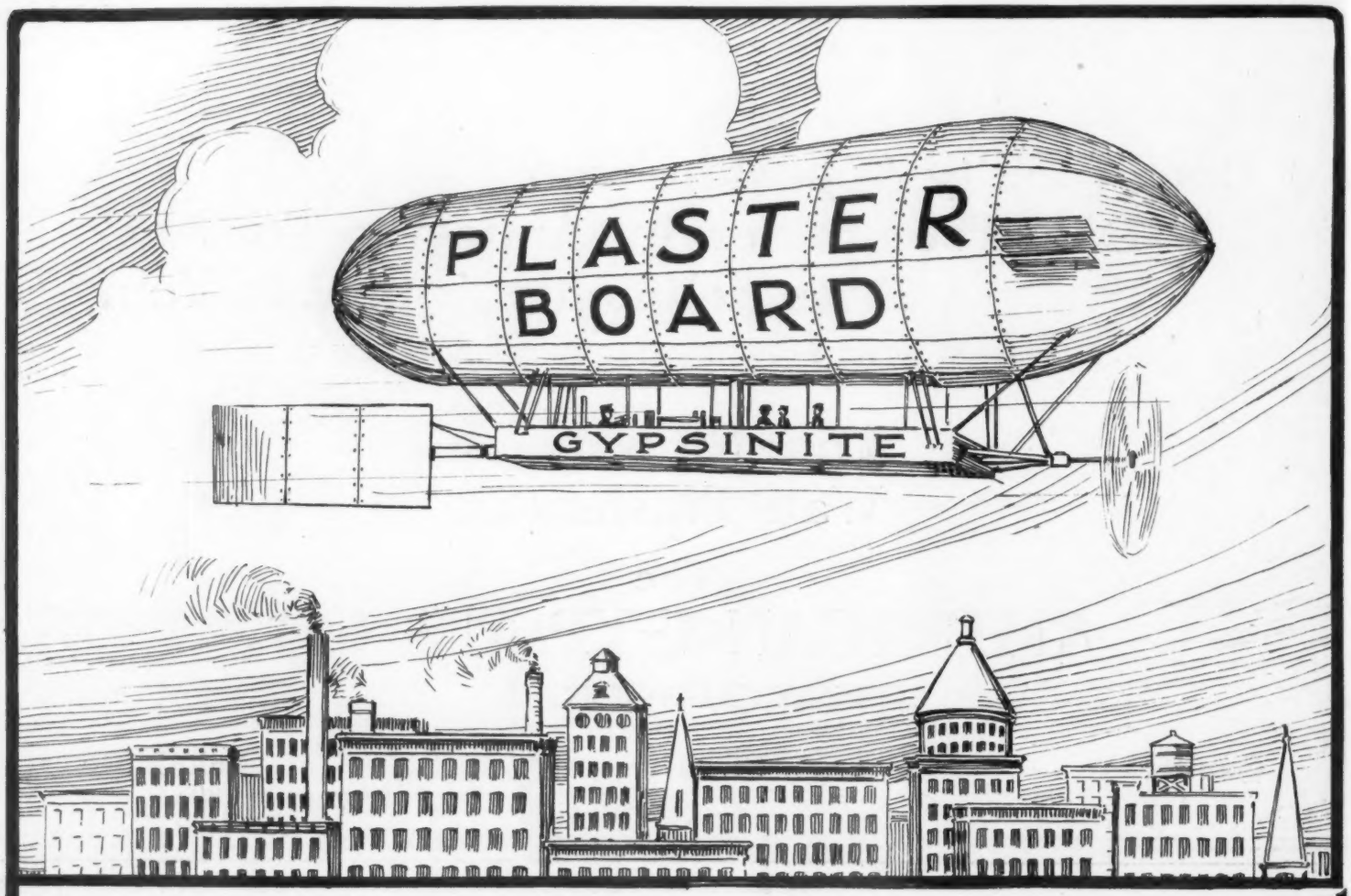
RETARDER Wood Fiber

THE OHIO and BINNS RETARDER CO.
PORT CLINTON, OHIO

Reliable Stucco Retarder=Strong=Uniform in Strength=
Duplicate power plant (electric and steam power) installed so as to preclude any possibility of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

THE OHIO and BINNS RETARDER CO.
PORT CLINTON, OHIO

Tell 'em you saw it in ROCK PRODUCTS



UP TO DATE

DEALERS everywhere report **big sales** and **increasing profits** on **PLASTER BOARD** and **GYPSINITE.** These two up-to-date building commodities are **fast rising** in the estimation of architects, contractors, and builders.

PLASTER BOARD is replacing lath and **GYPSINITE** in taking the place of wood studding in all up-to-date construction. They are fireproof, soundproof, and economical.

If you are not already featuring **PLASTER BOARD** and **GYPSINITE, begin now.** In this age of the flying machine, when the whole world is alive to things new and better, you ought to see a splendid opportunity for yourself in these advanced construction materials. They offer you new sources of **profit** and as an up-to-date dealer you can't afford not to carry them.

Write or wire now for quotations, or literature, and in ordering up-to-date materials, remember the importance of up-to-date **SERVICE**—make it read "U. S. G. Co."

Address our nearest office.

UNITED STATES GYPSUM CO.

NEW YORK
CHICAGO
MINNEAPOLIS
CLEVELAND
SAN FRANCISCO

SACKETT·PLASTER·BOARD

FIRE PROOFING

Instead of Lath

Time Saving

Labor Saving

Money Saving

The board that made plaster boards famous

First used in 1891 Perfected in 1908

SACKETT PLASTER BOARD Co.

7 BATTERY PLACE
NEW YORK

UNITED STATES GYPSUM CO.
CLEVELAND,
CHICAGO,
MINNEAPOLIS.

GRAND RAPIDS PLASTER CO.
GRAND RAPIDS
MICH.

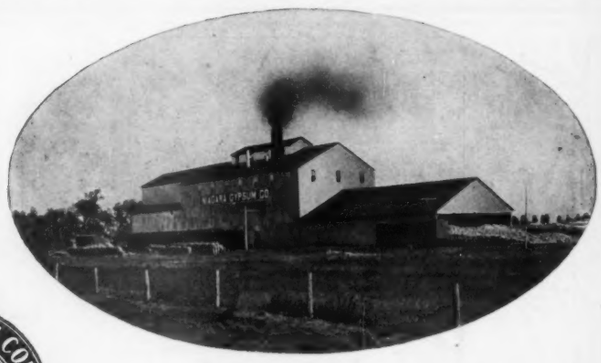
NIAGARA GYPSUM CO.

MANUFACTURERS OF

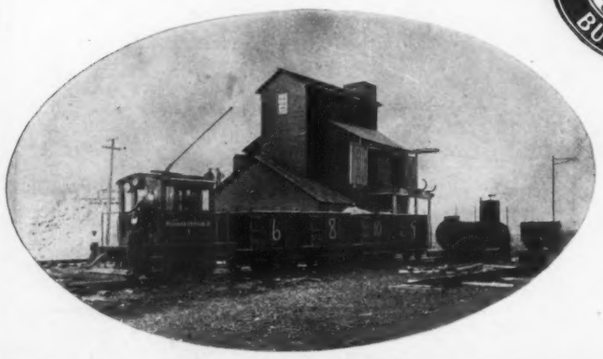
GYPSUM PRODUCTS

MINES and MILLS Oakfield, N.Y.

GENERAL OFFICES Buffalo, N.Y.



Our electrically equipped mines and mills are now in operation with a capacity of 300 tons per day, and we assure you of prompt service.



We Manufacture Stucco, Neat Cement Plaster, Ready Finish, Wood Fibre Plaster, Finishing Plaster, Sanded Wall Plaster, Crushed Rock, Land Plaster.

STOP! LOOK! LISTEN!

DON'T GET ON THE WRONG TRACK. TROUBLE AHEAD IF YOU DO.

RELIANCE WOOD FIBER QUALITY STRENGTH CAPACITY WALL PLASTER

PLASTER COACHES FURNISHED UPON APPLICATION, ALL POINTS COVERED.

Empire Gypsum Co.

MINES, MILLS, OFFICE:

GARBUTT, - NEW YORK

The Improved Peerless

One-Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation, making 12,000 perfectly formed bricks in ten hours.

The superiority of the Peerless Brick Machine was demonstrated conclusively at all of the recent conventions.

It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

Write at once for particulars.

Peerless Brick Machine Co.

15 NORTH SIXTH STREET MINNEAPOLIS, MINN.

HERCULES

BLOCK MACHINES

ARE THE FASTEST, SIMPLEST, STRONGEST AND

BEST MACHINES BUILT

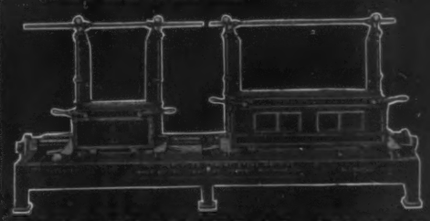
AND WE CAN PROVE IT

THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone can be made at ONE time, or two 20 inch, 24 inch or 32 inch stone at one time.



THE HERCULES IS AN OLD ESTABLISHED MACHINE

Built along Correct Lines and Endorsed by the Leading Contractors and Builders. They are used in all parts of the world.

A Few Facts Regarding

Hercules Machines

They have been in constant use for nearly six years.

They have furnished stone for more large important buildings than all other machines put together.

They are used by the United States Government.

They produce two-thirds of the blocks used on the Island of Porto Rico.

They have just been used in the construction of a $60,000 concrete block church in Dublin, Ireland.

They are producing stone at the present time in block plants in Rochester, N.Y. at the rate of over 5,000 blocks daily.

Send for catalog.

CENTURY CEMENT MACHINE CO.

288-298 St. Paul St.
ROCHESTER, N. Y.

THIS new illustrated **sixty-four page catalog** has just been received from the press and will be mailed to you **free** upon receipt of your request.

It is a book compiled after many years of experience in the manufacture and use of concrete machinery and equipment, and embodies many fine-toned illustrations of the highest class concrete machinery in existence. It also contains much useful information for the buyer and will be found a handy reference book.

If **you** are in the market for anything in the line of concrete machinery or equipment **you** should receive this catalog before purchasing. The merits of the machines and the clear illustrations are sure to **please** and **interest** you. Don't put it off---send us your name right now. Tell us just what you are interested in most and receive this catalog with complete information and prices.

THE C&S LINE

The Cement Tile Machinery Co.

740-45 Rath St., EAST WATERLOO, IA.

Anchor Concrete Block Machines

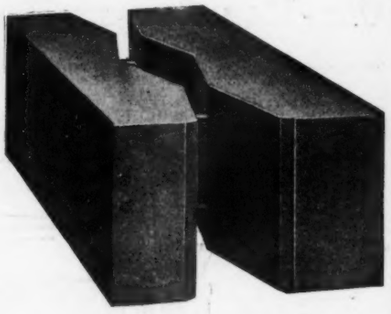
THEY HAVE STOOD THE TEST OF TIME AND MADE GOOD, WITH A PROFIT TO THE USER, TOO.

ANCHOR MACHINE IN POSITION TO RECEIVE MIXTURE

Anchor continuous air space blocks guaranteed frost and moisture proof.

Anchor blocks are bound together with firm ¼ inch galvanized iron rods 8 inches long and turned one inch at each end.

Standard Anchor Machines make blocks that lay in the wall 8 in. by 24 in., any width from 8 in to 12 in.



THE FAMOUS ANCHOR BLOCK. ENDORSED BY ARCHITECTS EVERYWHERE.

Anchor Jr. Machines make blocks that lay in the wall 8 in. by 16 in. and any width from 8 in to 12 in.

ONE ANCHOR MACHINE, PLUS ENERGY, BACKED BY A LITTLE CAPITAL MEANS THE PRODUCTION OF HIGH-GRADE BUILDING ALWAYS IN DEMAND.

WRITE FOR CATALOGUE AND PRICES.

ALL MACHINES SOLD DIRECT TO THE TRADE.

Anchor Concrete Stone Company

ROCK RAPIDS, IOWA

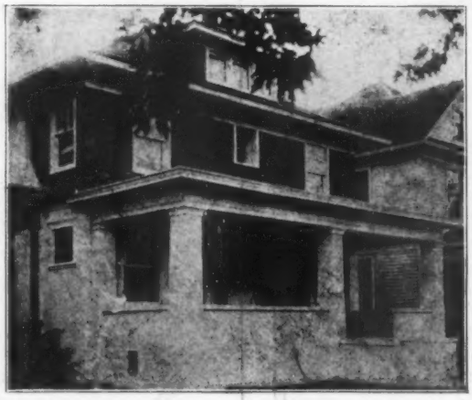
KELLASTONE

PURE WHITE PLASTIC STONE

Applied on wood or metal skeleton frame, inside and outside walls, porch complete, steps and columns.

Water Proof
Fire Proof
Acid Proof

Imagine a house without a crack or crevice. No carpets; floors and base one piece. Rug center with colored border.



KINTZ DWELLING, South 7th Street, Terre Haute, Ind.

Architects can let their fancy run wild. Kellastone can be applied on any shape or form, wood or iron. Twenty-five shades or colors.

Branch factories will be established throughout the United States.

Main Factory

Address

Main Office

Sanitary Construction and Manufacturing Co.

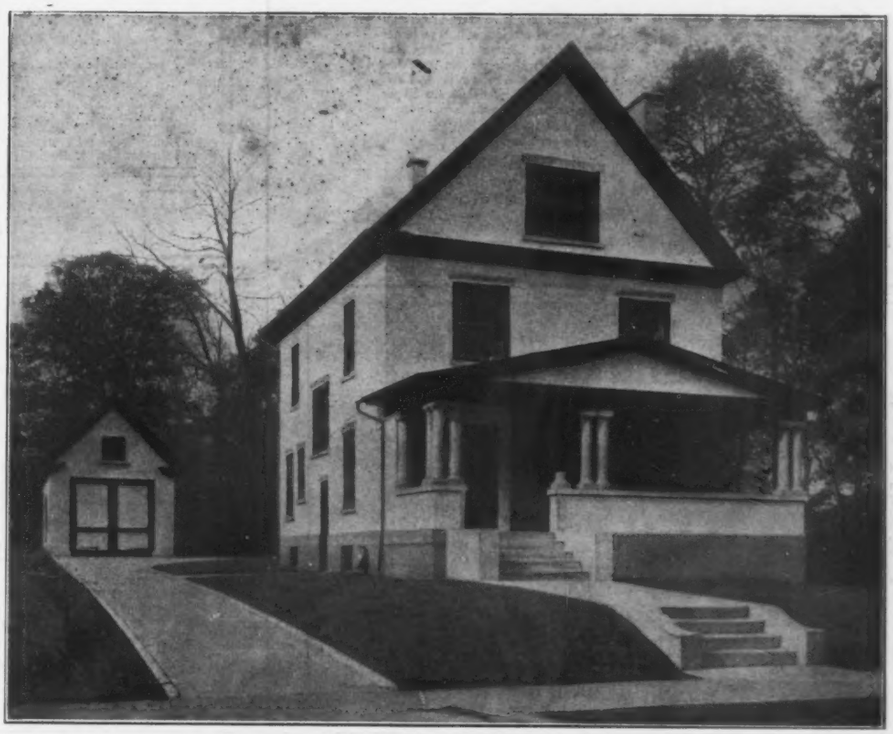
TERRE HAUTE, IND.

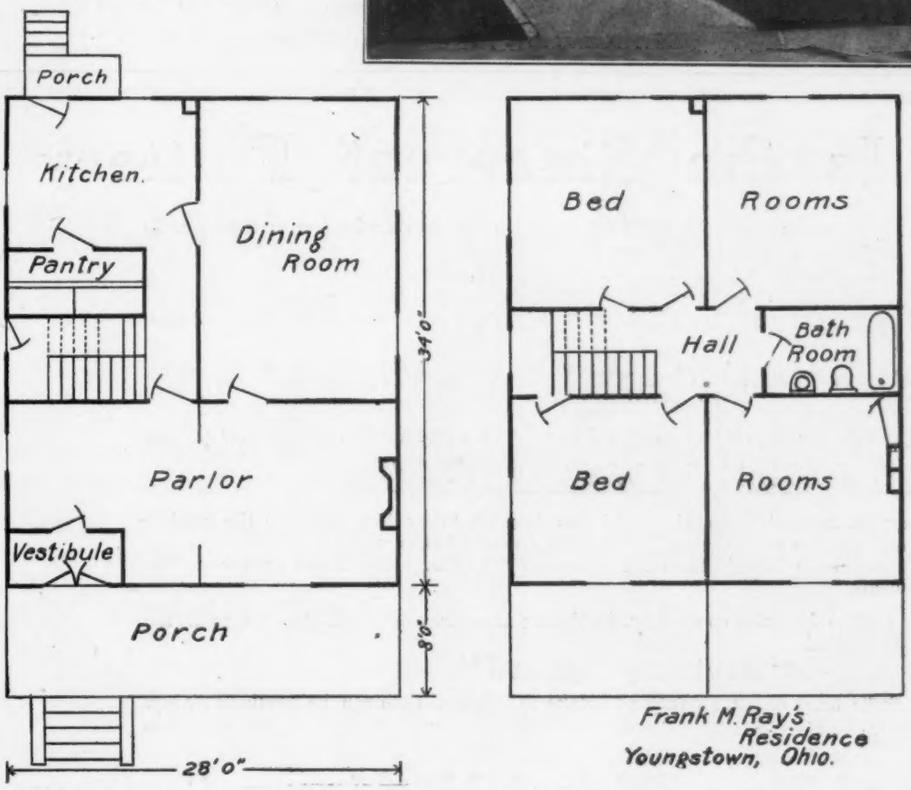
Low Cost Concrete Homes

The greatest obstacles to the use of concrete in small residence construction are: 1. The expense of form work and contractor's plant in reinforced concrete (monolithic) construction, and 2. The unsatisfactory appearance and poor waterproof qualities of concrete blocks made by the dry-tamp process. Both these obstacles have been overcome by

The Pauly Concrete Hollow Tile.

Full particulars with regard to the equipment of a suitable factory with the necessary machinery for any location will be cheerfully given, and a conservative and profitable deal will be exhibited for prospective manufacturers of concrete structural tile upon request.





Frank M. Ray's Residence
Youngstown, Ohio.

This residence is fireproof and waterproof. It was built in Youngstown, Ohio, fall of 1908, upon the following contract specifications:

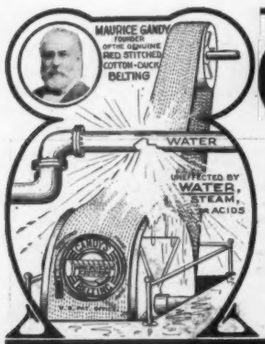
Masonry work complete, including selling price of tile, concrete floor extending under entire basement and combination tile and reinforced concrete floors	$ 950.00
Excavation of cellar and construction of walks, steps, etc., outside of building proper	125.00
Lumber, hardwood lumber finish for interior and glass (including built-in furniture and plate glass mirrors)	1,000.00
Carpenter work	700.00
Slate roof and spouting	200.00
Plumbing in kitchen, bathroom and basement	250.00
Painting (exterior and interior)	125.00
Furnace and piping	150.00
Total plastering (including material)	200.00
	$3,700.00
Plus 10% profit	370.00
Total contract price	$4,070.00

The walks, driveway and steps, as well as the porch columns, are of concrete. It is sumptuously finished inside with hardwood, plate glass windows and doors with slate roof and six massive pieces of built-in furniture of elegant design, with plate mirrors, etc., all included in the figure named.

There is a good business opportunity in building homes of this type in any city. We furnish the entire machinery outfit upon the basis of a lease.

Send for booklet showing a large number of houses built with this material.

CONCRETE STONE & SAND CO., Youngstown, O.



THE GENUINE GANDY

In quarries they have learned to specify "The Gandy" and leather belts no longer have any show; because the Gandy Red Stitched Cotton Duck Belting, just seems to grow strong and healthy in sand and water. Besides Gandy Belts are 60 per cent cheaper than leather.

Learn how to forget Belt troubles by sending for our free booklet,

"Experiences with Gandy"

and learn always to insist upon

"Gandy Belt Dressing."

THE GANDY BELTING CO. BALTIMORE, MD.

Perfection at Last Attained in the Concrete Block Industry

The Perfection Power Block Machine is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure.

Makes 8, 9 and 12x8x24 inch blocks in five faces, and fractional and angle blocks.

Machine can be arranged to make **Two Piece** and **Faced** Blocks if desired.

All machines delivered, set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with five men.

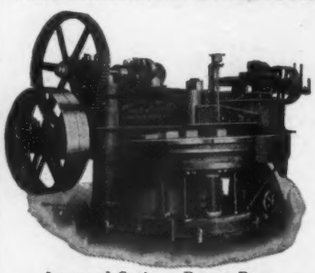
Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design.

Full details, catalog, testimonials, etc., sent upon request.

THE PERFECTION BLOCK MACHINE CO.
SIOUX FALLS, SOUTH DAKOTA.

The American Sandstone Brick Machinery Co.

SAGINAW, MICH.



Improved Saginaw Rotary Press.

Built either right or left handed in three sizes of capacities of 800, 1400 and 2200 brick per hour. Can be equipped with extra table for making face and fancy brick on which double pressure is exerted.

Complete Sandstone Brick Plants or Partial Equipments Installed Under Absolute Guarantees as to Capacity, Quality, and Cost of Production.

WE are the oldest manufacturers of Sand Lime Brick Machinery in the U. S. today, and have more successful plants in operation than any other Company. Why not profit by our experience? Send us samples of your sand and let us advise you as to it's quality for brick purposes and what machinery you will require to produce the best results. Write for catalogue "C" describing our system in detail.

Buffalo Brick Clamp

Will Pay for Itself

In three days by handling brick over the old method.

By saving twenty-five per cent. time unloading a car of brick.

By not making a mistake in the count, as they can be adjusted from four paving brick to twelve regular.

THE ONLY TOOL TO HANDLE BRICK

By saving from 50c to $1.00 on every thousand pressed brick by not chipping.

Pavers save thirty-three per cent. by carrying bricks from curb to paver instead of wheeling them.

Takes from four paving brick to twelve regular.

Manufactured by

Mostberger-Langner Iron Co.
876-890 S. Division St., Buffalo, N. Y.

Imitation Is the Sincerest Flattery

Since it has been proved that our Patented Method for mixing sand and lime for the manufacture of brick or stone, commonly known and named by us the

"Division Method"

is a success, and the only way of producing a high grade brick or stone of real merit at a low cost, others are offering to install a

"Division Method" or a "Division System"
AS SOME CALL IT

Although we fully appreciate the high compliment paid us by such attempts to imitate our process

WE DESIRE TO WARN INVESTORS

that such imitation or "just as good" methods are failures, because "they do not deliver the goods". Moreover, any successful imitation would be an infringement on our process which is fully covered and protected by Letters Patent in the United States and all foreign countries. We will protect our patents and prosecute infringements.

We erect and equip up-to-date factories completely, furnishing machinery of special design for our use and operated under our Patented

"Division Method"

producing the highest grade brick or stone possible to make at less cost than can be produced by any other system or machinery.

Correspondence Solicited.

International Sand Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 West St., - - - New York, N. Y.

W

S

O

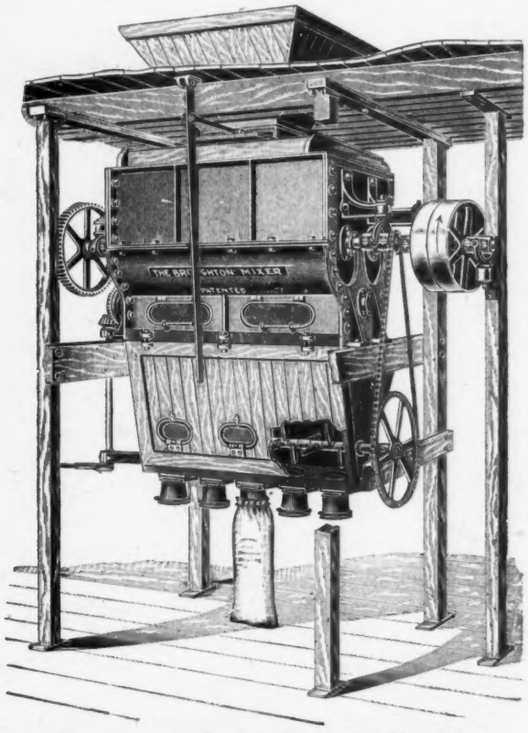
We
it a
qua
We
or
Our
full

and
Cen
App

ther

T
M

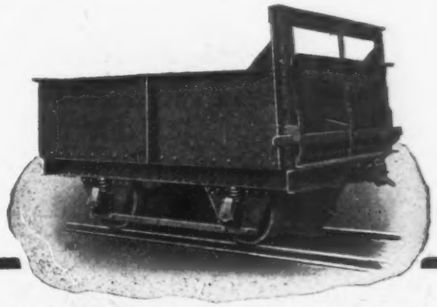
WI



The most thorough and efficient Mixers of Plaster, Cement and Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N.Y.

"USE WIENER TRACKS AND CARS TO CARRY YOUR LOAD."



Above cut shows an all-steel car for carrying cement, limestone, etc.

OUR STEEL CARS

Stand in a class by themselves. They are manufactured by SPECIAL MACHINERY and combine the latest ideas of design and construction. Our experience covers a period of 20 YEARS in this business and our Industrial Railway Material embodies all the features which experience has taught us to be the best.

LARGE STOCK

of Industrial Track, Frogs, Switches, Crossings, Turntables, complete track layouts, CARS, etc. Prompt shipment of all equipment.

Our Catalogue 17 is full of illustrations and gives dimensions and other valuable information—It will be sent on request.

RAILROAD SPECIALISTS FOR ALL INDUSTRIES.

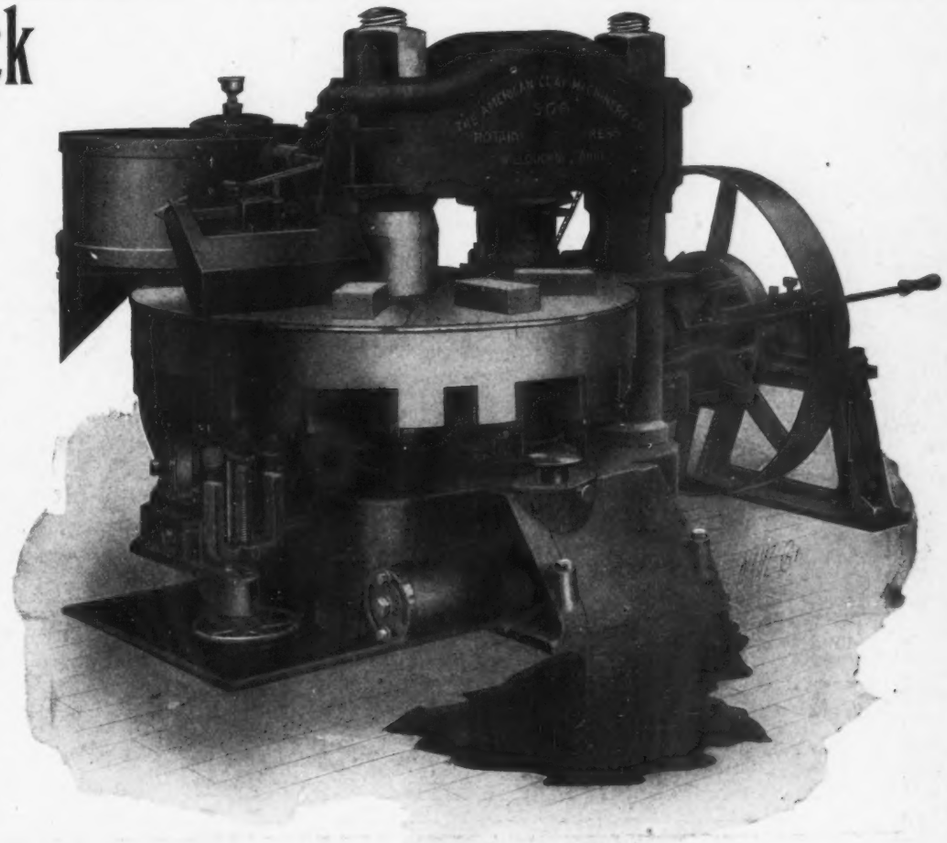
ERNST WIENER COMPANY

196 Fulton St., NEW YORK, N. Y.

BRANCH OFFICES:

Chicago, 1540 First National Bank Building
Boston, 141 Milk St. — Denver, Col., Cooper Bldg. — Pittsburg, 419 Park Bldg.
Los Angeles, Cal., 106 W. 3d St. — Norfolk, Va., 160 Water St. — San Francisco, 802 Second St. — St. Louis, Mo., 563 Security Bldg.

Sand-Lime Brick Machinery



OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

The American Clay Machinery Company

WILLOUGHBY, OHIO, U. S. A.

WE BUILD **CARS** FOR QUARRIES, MINES, CEMENT WORKS AND GENERAL USE

No. 217-E
Side Dump Car
Equipped with Motor

No. 277
Steel Mines and Quarry Car

No. 145-C
Pressed Steel Top, Ball Bearing Turntable; Patented

SWITCHES, FROGS RAIL, TURNTABLES

No. 600
Steel Dumping Bucket

THE ATLAS CAR & MFG. CO.
CLEVELAND, OHIO.

GIANT CEMENT IN HUDSON TUNNELS

The news was flashed round the world on Monday, July 19th, that the great Hudson Tunnels were opened upon that day, reducing the time between New York and Jersey City to 3 minutes. In this engineering marvel, which will increase land values as well as transportation facilities for millions, and in which a city and state rejoiced

GIANT PORTLAND CEMENT

was used to the extent of hundreds of thousands of barrels. The reason: STRENGTH, UNIFORMITY and DURABILITY.

(SEND FOR OUR BOOKLETS)

American Cement Co.
PHILADELPHIA

ARE YOU GOING TO BUILD?

No matter what kind of a structure you contemplate building, it will pay you to post yourself on the advantages of concrete construction made with

Daily Capacity **ATLAS** Over 40,000 Barrels

PORTLAND CEMENT

THE ATLAS PORTLAND CEMENT CO. PORTLAND ATLAS CEMENT 30 BROAD ST. NEW YORK

A concrete building means protection from fire, vermin and decay. It is cool in summer and warm in winter; requires no paint or repairs, yet permits of pleasing architectural effects and color schemes. In most cases you will find concrete construction the least expensive in the beginning and in all cases the cheapest in the end.

The success of concrete construction depends largely on the quality of the cement used. ATLAS is the highest grade of Portland Cement manufactured.

This Company makes but one quality—the same for everybody

Tell your architect to specify ATLAS.—Ask your dealer for it. You will know it by the Trade-Mark.

Building Books FREE on request. As a guide to prospective builders we have published the following books which will be sent FREE on receipt of postage.

Concrete Country Residences. Postage 25 cents.
Concrete Cottages. Postage 1 cent.
Concrete Construction about the Home and on the Farm. Postage ½ cents.
Reinforced Concrete in Factory Construction. Postage 10 cents.

THE ATLAS PORTLAND CEMENT COMPANY
DEPT. U **30 Broad St., New York**